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CHALLENGE 40

The Magazine of Science-Fiction Gaming

*Special
Equipment
Issue*

2300

**TWILIGHT: 2000
Heavy Weapons
Sneak Preview**

Loren K. Wiseman

1989

**SPACE: 1889
A Simple Conversion
for Flying Vessels**

Frank Chadwick

1942

**MEGATRAVELLER
3G Conversions
for Megatraveller**

Greg Porter

1889

**STAR WARS
Blaster Weapons
of the Rebel Alliance**

James B. King

GDW

King

20

YEAR



UPDATE

1639

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THE YEAR IS 3050.

The 4th Succession War has been over for 20 years.

The Rasalhague Military District broke with the Draconis Combine, forming the Free Rasalhague Republic.

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In an unexpected show of strength, the Combine military, under Theodore Kurita, stops the Federated Commonwealth invasion of 3039 cold.

ComStar unveils a huge 'Mech army to garrison its thousands of installations throughout the Inner Sphere.

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Romano Liao lends off a Canopus-Andurien invasion and rebuilds the Capellan Confederation from the ashes left by her demented father.

Vast amounts of Star League Technology appear from strange quarters.

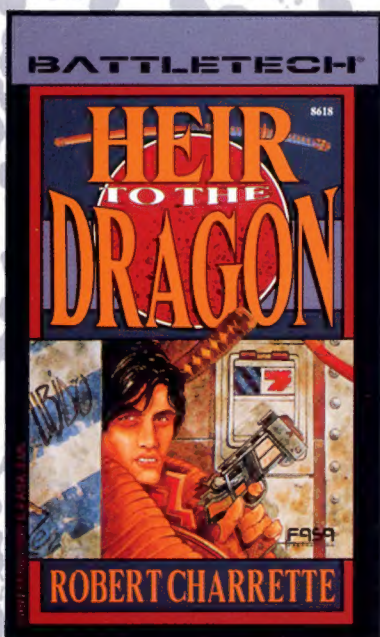
Don't think of your character as twenty years older...think of his son as being ready for battle.

HEIR TO THE DRAGON

A BATTLETECH Novel by Bob Charrette

A flash of steel, a thin crimson line, and a foamy gurgle of confusion marked the beginning of Takashi's rule and the passing of Theodore's grandfather.

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GDW: 1802. ISBN 1-55878-045-9. Boxed.....\$10.



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GDW: 1890 ISBN 0-943580-73-0. Boxed.....\$28.

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- **Space: 1889** miniatures rules.
- Military background, color plates, organization of troops.



The life of the soldier exemplifies the spirit of **Space: 1889**: the image of the noble-born English officer, his native troops at the ready, standing against hordes of savage primitives in the name of Queen and Empire. The **Soldier's Companion** is dedicated to depicting the lives of colonial soldiers, from their organizations and locations on Venus and Mars to their varying stores of equipment. An extensive color section serves as a uniform guide and painting illustration as you assemble your armies of miniatures. Also, **Soldier's Companion** introduces the mass combat and miniatures rules for **Space: 1889**—as the colonial trouble spots of the Solar System flare up, you'll be ready for them with **Soldier's Companion**.

GDW: 1984. ISBN 1-55878-026-2. 96 pages.....\$12.

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U.S.A. All rights reserved. ISSN 0894-5535. All
editorial and general mail should be sent to
Challenge, P.O. Box 1646, Bloomington, IL
61702-1646 U.S.A.

The issue price is \$3.25. One-year subscrip-
tions (six issues) are \$15 in the U.S. and Can-
ada. Foreign subscriptions (outside the U.S. and
Canada, but not to APO or FPO addresses) by
surface mail are \$30 per year. Foreign subscrip-
tions by air mail are \$50 per year. Please make
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Special Hardware Issue!

CHALLENGE **40**

The Magazine of Science-Fiction Gaming

—TWILIGHT:— 2000—

Heavy Weapons Guide Preview, Loren K. Wiseman	4
The Stoner 63 Weapon System, Loren K. Wiseman	8

—SPACE 1889—

More Weapons, Bret A. Foland and Lester W. Smith	10
A Simple Conversion Guide for Flying Vessels, Stephen Lawrence	13

—MEGATRAVELLER—

3G Conversions for MegaTraveller, Greg Porter	22
Portable Weather Station, Simon Ward	23
Helipack, Simon Ward	25
Magniviewers, Simon Ward	27
Hercules Space Tugs, John Faylo	31
Taser, Kevin Barry	33
Claw-Glove, Christopher Willoughby	35
Match, Christopher Willoughby	37

S I N C E 1 9 7 3



P.O. Box 1646
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2300AD

Riding the Wave, <i>Lester W. Smith</i>	38
Cellular Launcher, <i>Carl A. Bergman</i>	41
M17A1 APC, <i>C.W. Hess</i>	44
The <i>Stahlhammer</i> , <i>Karl Martin</i>	47
GDW System Overview	50
Anatomy of a Space Mine, <i>Karl A. Bergman</i>	53

STAR TREK

Marc-Class Passenger Liner, <i>John A. Theisen</i>	56
Charles-Class Commercial Transport, <i>John A. Theisen</i>	58
Shasta-Class Robot Fighter, <i>John A. Theisen</i>	60
New Lynn-Class Passenger Liner, <i>John A. Theisen</i>	62



Garrison Duties, <i>John A. Theisen</i>	20
The Emperor's Bag of Tricks, <i>Cliff Holmes</i>	64

RENEGADE LEGION

Commonwealth <i>Swiftsure</i> , <i>John A. Theisen</i>	68
TOG <i>Onager</i> , <i>John A. Theisen</i>	70

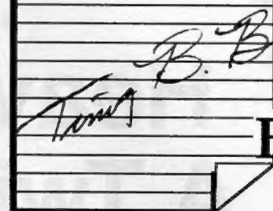
STAR WARS

Blaster Weapons of the Rebel Alliance, <i>James B. King</i>	72
---	----

Features

Product Distribution	33	Reviews	74
Feedback Results	37	Classifieds	78
Traveller News Service ...	34	Next Issue	80

MEMO



From the Management

Hardware. The core of most science-fiction literature is its hardware, the hitherto unheard-of fantastic devices that make the adventures and situations possible. Incredible spacecraft that laugh at the so-called speed of light barrier. Electronics which allow one to abandon his physical self for a junket through the world of computer data and programs. Remarkable weapons barely capable of turning back alien invaders of equal or greater technology. Hardware makes science fiction work, and that is why we have devoted this entire issue of **Challenge** to the hardware of futuristic science-fiction role-playing games.

The idea of special issues is hardly new to the magazine industry. Provided they are spaced between standard issues of a magazine, the readership is generally satisfied to turn its attention, however briefly, to one specific area of thought.

The problem we encountered is the diversity of our readership and interests—your interests. We cover a number of games, and slighting one in favor of another is virtually taboo; that's a dance we have to perform with every issue.

Therefore, we were forced to make concessions in our thinking about special issues. The overall topic of the issue had to be one which could touch upon every futuristic role-playing game we deal with. A special issue on, say, **MegaTraveller**, would have greatly pleased several fans of that system, but would have completely alienated many other readers, readers who deserve a copy of **Challenge** they too will use and enjoy.

Loren and I discussed the possible topics which fitted easily into these constraints. One of my first ideas was to create a special issue devoted to solitaire adventures. Many of our readers have expressed interest in solitaire adventures for various reasons, and we could publish them on any game system we want to. Also, solitaire adventures are of tremendous utility in introducing a new player to a different game system.

If you always figured you might be interested in *Star Wars*, for instance, you could play the solitaire adventure, and, if you enjoyed yourself, you could encourage your friends to do the same. When you were finished, you might have a whole gaming group eager to play the new game in a group environment. Unfortunately, it will be some time before we can muster enough authors to create enough solitaire adventures for an entire **Challenge** issue. Instead, we had to opt for a more attainable option, this hardware issue.

As usual, we are always interested in hearing your comments about the magazine. What do you think of special issues, and what topics would you like to see in them? We hope you enjoy the pieces of hardware presented in this issue and find the time to mix them liberally in your campaigns.

—Timothy B. Brown

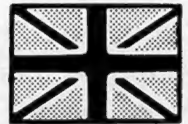
Loren K. Wiseman

Heavy Weapons Guide: A Twilight: 2000 Preview

In response to tremendous consumer demand, we have decided to publish a **Heavy Weapons Guide** for **Twilight: 2000**.

As a service to our readers who want to take a look at the sourcebook before investing in it, we hereby provide the following samples.

Each description includes an illustration, a short commentary, game statistics, and a nationality symbol to help users group the weapons by nation.



L16A1 81mm Mortar

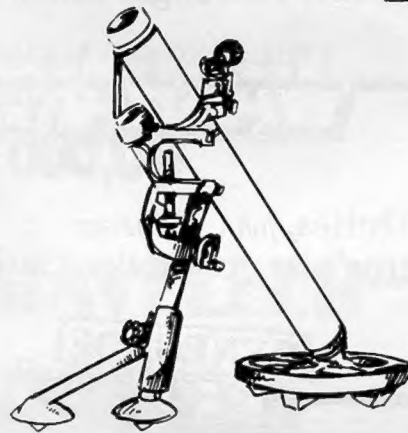
This weapon is the standard medium mortar for the British and Canadian armies, as well as several smaller nationalities.

Weight: 40 kg (bipod 15 kg, baseplate 10 kg, tube 15 kg)

Price: \$12,000 (C/S)

Nation: United Kingdom

Type	Rnd	Rng	Dam	Arm	KDR	Burst	IFR
81mm Mtr	HE	—	x25C	x10	5	30	4500
ROF: 1	WP	—	x15C	x10	—	20	4500
Mag: 0	ILLUM	—	—	—	—	1000	4500



M38, M43 120mm Mortars

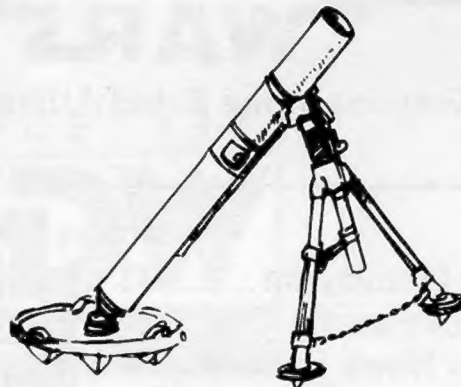
The M38 and M43 are similar designs, with the main differences being minor modifications to the M43's elevating and traversing gear.

Weight: 275 kg

Price: \$15,000 (C/C)

Nation: Warsaw Pact

Type	Rnd	Rng	Dam	Arm	KDR	Burst	IFR
20mm Mtr	HE	—	x35C	x10	10	45	5700
ROF: 1	WP	—	x15C	x10	—	40	5700
Mag: 0	ILLUM	—	—	—	—	1500	5700
	CHEM	—	x1C	x10	—	15	5700



M43, M53 160mm Mortars

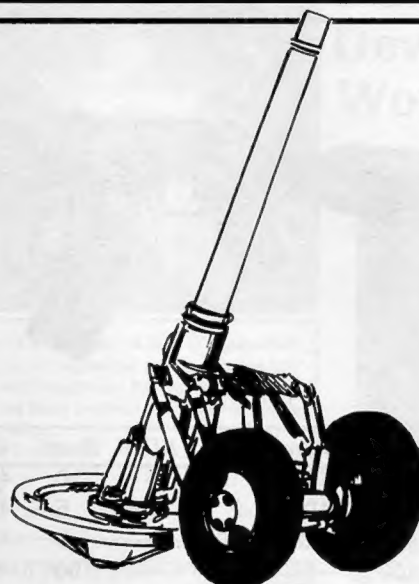
Although slightly more common than their heavier brethren, mortars of this large caliber are still rarely encountered. Like most mortars of this size, the M43 and M53 are breechloaders.

Weight: 1.3 tons

Price: \$30,000 (—/R)

Nation: Warsaw Pact

Type	Rnd	Rng	Dam	Arm	KDR	Burst	IFR
160mm Mtr	HE	—	x40C	x8	12	50	8000
ROF: 1	WP	—	x20C	x8	—	45	8000
Mag: 0	CHEM	—	x1C	x8	—	18	8000



RPG-27

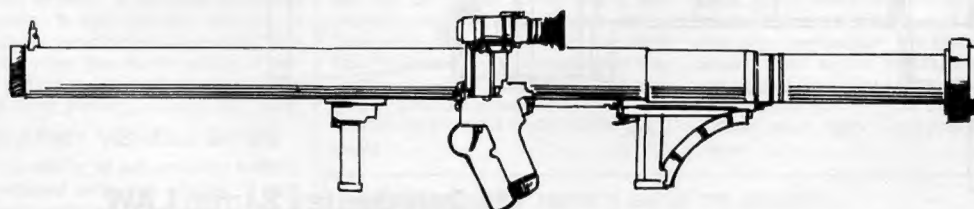
Traditionally, the Czech armament industry has preferred to manufacture its own variants of Warsaw Pact weapons for use by its soldiers.

Weight: 7.5 kg (loaded)

Price: \$1500 (—/R)

Nation: Czechoslovakia

Type	Rnd	Rng	Dam	Arm	KDR	Burst
RPG-27	HEAT	100	x20C	—	5	10
ROF: 1						
Mag: (2)						



JU

M79

The Yugoslavian M79 (not to be confused with the American GL of the same designation) is patterned after the French LRAC 89.

Weight: 3.5 kg (unloaded)

Price: \$3500 (—/R)

Type	Rnd	Rng	Dam	Arm	KDR	Burst	IFR
90mm RPG	HEAT	150	x18C	—	2.5	10	400
ROF: 1	HEDP	250	x15C	x2	5	20	400
Mag: (2)	WP	250	x15C	x10	—	20	400



AK-GL

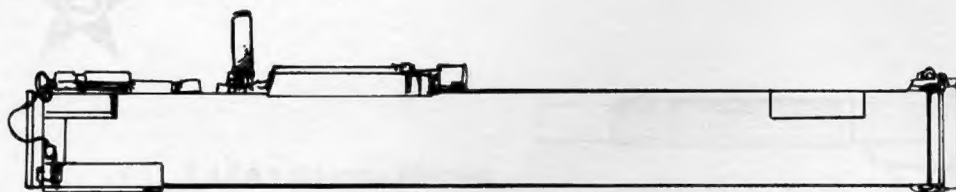
The advantages of a grenade launcher that can be attached to an assault rifle or used separately are obvious, although the Soviets took their time in developing theirs. The AK-GL was first used in the Afghan War in the mid- to late-1980s.

Weight: 1 kg

Price: \$700 (—/S)

Nation: Warsaw Pact

Type	Rnd	Rng	Dam	Arm	KDR	Burst	IFR
40mm GL	HE	100	x10C	x10	5	10	400
ROF: 1	HEDP	100	x10C	x2	2.5	5	400
Mag: 1	CHEM	100	x1C	x10	—	5	400
	ILLUM	100	—	—	—	100	400



M72 66mm Light Antitank Weapon

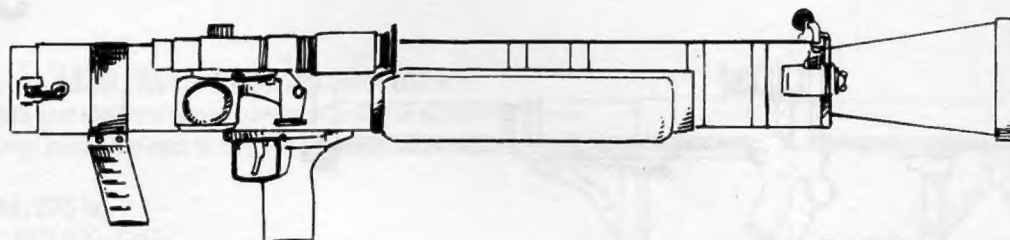
The M72 was introduced in the late 1960s and was the first disposable antitank rocket used by U.S. forces. Many were still to be found in warehouses at the start of the war and were issued to a few later formations.

Weight: 2 kg

Price: \$180 (S/R)

Nation: United States

Type	Rnd	Rng	Dam	Arm	KDR	Burst
66mm LAW	HEAT	100	x15C	—	2.5	5
ROF: 1						
Mag: 0						



M3 Carl Gustav 84mm LAW

The M3 Carl Gustav 84mm is sold throughout the world by the Swedes, and the weapon is fairly common in many European and Third World armies.

Weight: 8 kg

Price: \$800 (C/S)

Nation: Sweden Ω

Type	Rnd	Rng	Dam	Arm	KDR	Burst
LAW	HEAT	200	x20C	—	2.5	5
ROF: 1	CHEM	200	x1C	x10	0	2.5
Mag: 0	HEDP	200	x20C	x5	5	5



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TWILIGHT: 2000

For five years the armies of the world have fought back and forth across Europe. Three years ago the missiles started flying. Most countries were hit hard in the nuclear exchange, but no one had a decisive advantage, and the war went on. Tanks began breaking down, and the supply of spare parts gradually dwindled to zero. The sophisticated artillery weapons have shot off all of their ammo, and no one is capable of producing any more. Divisions which started with 20,000 men are lucky to put 2000 in the field.

But the war goes on. You are part of the remnants of the leading U.S. division of NATO's last drive into central Poland. There isn't much in the way of an organized military force left on either side. Local warlords, militia, and murderous bands of marauding deserters rule the countryside. Your division has been overrun. Your group is hundreds of kilometers from the nearest friendlies.

Welcome to the world of **Twilight: 2000**.

Twilight: 2000 is a complete role-playing system for survival in a devastated post-holocaust world. Rules cover character generation, living off the land, encounters, combat, skills and skill improvement, medicine, vehicles, ammunition, trade, and much more. The combat rules are a major breakthrough. One general combat resolution procedure covers all types of combat: hand-to-hand, melee weapons, small arms fire, and fire against armored vehicles. The background of the war is covered in detail, and extensive material on the state of the world is included to assist the referee. The beginning adventure, "Escape from Kalisz," paves the way for the Poland Series of **Twilight: 2000** modules. The *Play Manual* and *Referee's Manual* present these rules in an orderly and easy-to-learn manner, and the accompanying charts supplement and facilitate exciting role-playing action in a devastated world.

GDW: 0500. ISBN 0-943580-50-1.
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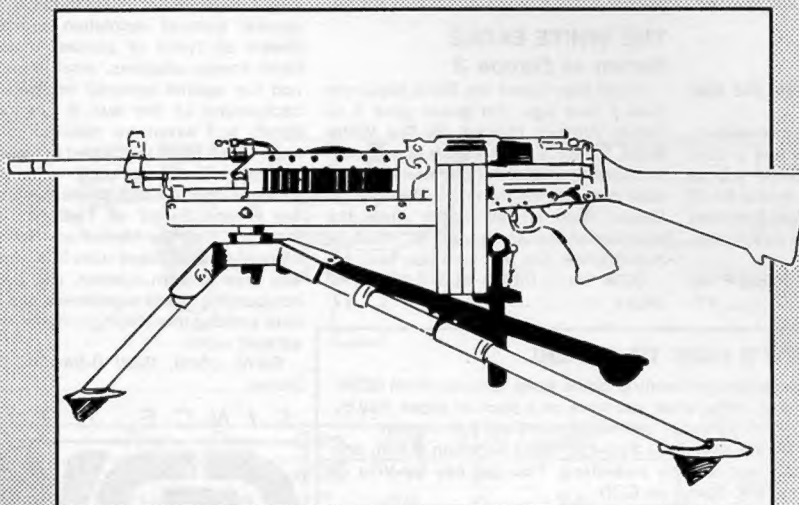
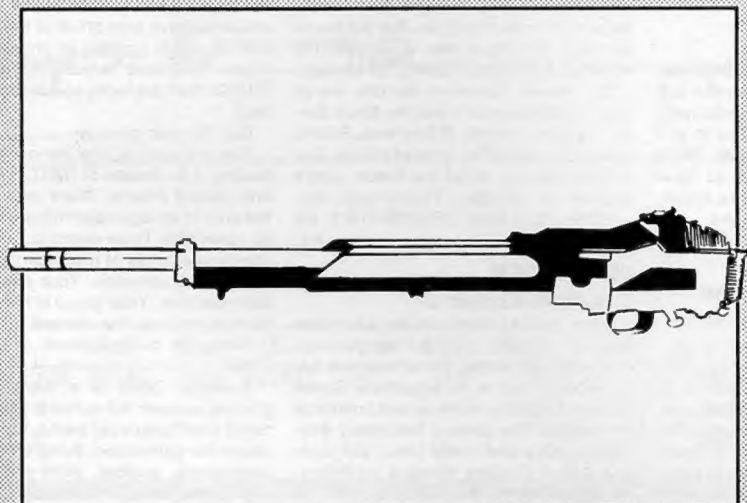
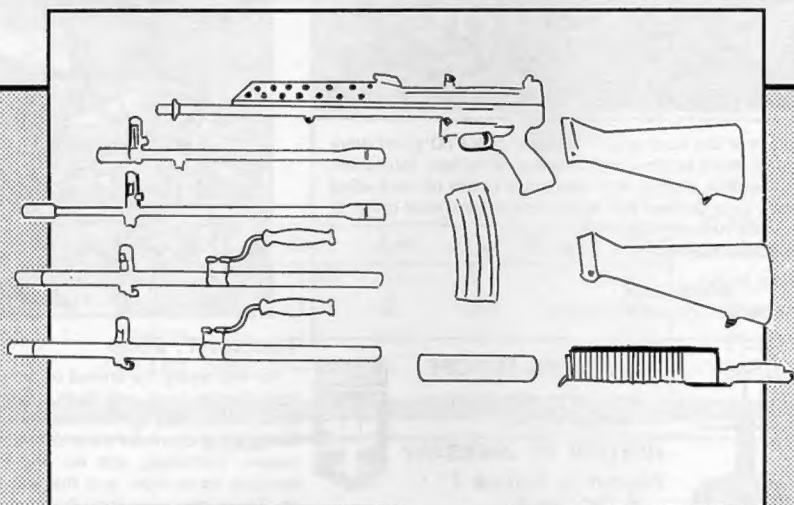
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The Stoner 63 Weapon System: The Guns that Never (Really) Were

Loren K. Wiseman



The Stoner 63 Weapon System is a series of six 5.56mm NATO caliber weapons (a rifle, a carbine, two light machineguns, a heavy machinegun, and a coaxial machinegun) built around a common receiver. All six weapons use a number of interchangeable parts, so that any one of the six can be built up from a single basic set of parts. For example, the Stoner system's carbine could be made from the system's rifle by substituting a folding stock for the normal rifle stock, and exchanging the rifle barrel with the shorter carbine barrel. The light machinegun is a rifle with a bipod barrel and a slightly different action (to allow it to take rifle magazines or belts of ammunition). The coaxial machinegun has parts for mounting in a vehicle, and a firing solenoid in addition to a trigger. Eugene Stoner (a firearms designer of considerable repute) developed the system in the 1960s as a proposed weapon series for the U.S. Department of Defense.

The Michigan firm of Cadillac Gage produced a limited run of the light machinegun for evaluation by U.S. armed forces (it was called the XM207 by the army, and MK23 by the navy). The MK23 is most famous for its use by U.S. Navy SEAL teams in Vietnam, where it acquired a reputation for malfunctioning under adverse conditions (the weapon required meticulous cleaning to prevent misfires). Nevertheless, the MK23 also acquired a number of supporters due to its light weight.

After a few years, when it became obvious that the U.S. military was not interested in the Stoner 63 Weapons System, Cadillac Gage granted rights to Mauser-IWK, which soon thereafter transferred them to NWM in the Netherlands. The system was never formally adopted by any major military or police force. It is a maxim in the American defense industry that if you can't get Uncle Sam to buy it, nobody else will either. Other countries evidently feel that if the weapon isn't good enough for the U.S. armed forces, it isn't good enough for them either.

The notion of a whole series of weapons with interchangeable parts would have solved some logistical problems, and was attractive from that viewpoint. The fact that the Stoner 63 weapons all used the same cartridge also had its attractions. The 5.56mm cartridge was lighter than the 7.62mm currently used for light machineguns (such as the M60). The main criticism of the Stoner 63 system was that it required all weapons to use a common receiver, one designed for the rigorous use required of a heavy machinegun. This made the rifle and carbine heavier than they would otherwise have been. The ultimate reason for the failure of the system was that like most multipurpose weapon systems, it did a lot of things, but none of them very well.

In defense of the Stoner 63 System, with a little more developmental work (to eliminate the unreliability demonstrated by the MK23/XM207 in Vietnam), it might have been successful. After all, the West German firm of Heckler & Koch (whose weapons are known for their reliability) employs a very high degree of parts interchangeability in its weapons, and most of them use an action of essentially the same design. It is not too great a step from interrelated weapons such as the G3/HK-21/PSG1 to a system such as Eugene Stoner envisioned.

TWILIGHT: 2000

WEAPON STATISTICS

Frankly, these weapons are really too scarce to have survived until 2000

in any significant quantity, but they are too interesting to be totally dismissed. Referees should exercise some discretion in the total number of weapons found—no more than one or two complete systems (which can be assembled into only one weapon at a time) should be allowed. For simplicity's sake, referees should assume it takes 15 minutes to convert from one weapon to another.

Carbine: This weapon has a short barrel and a folding stock, reducing its weight somewhat. The carbine version utilizes 10-shot magazines (using the standard game definition of one shot equals three actual rounds). *Wt:* 3.8 kg *Price:* \$1200 (R/—).

Rifle: This weapon has a longer barrel than the carbine, and a regular stock but uses the same magazines. *Wt:* 3.9 kg *Price:* \$1400 (R/—).

LMG Bipod (Mk23/XM207): This is the most common weapon of the system, and will accept either 33-shot belts or 10-shot magazines. *Wt:* 4.5 kg *Price:* \$1700 (S/—).

LMG Tripod: This weapon is slightly more robust than the bipod-mounted

TWILIGHT: 2000

LMG. It can fire either belts or magazines. *Wt:* 4.8 kg *Price:* \$2000 (R/—).

HMG: This weapon accepts only belts, but has a slightly higher rate of fire than the lighter weapons. *Wt:* 5.4 kg *Price:* \$2400 (R/—).

Coaxial MG: This weapon is seldom found separate from the vehicle it is mounted in, and cannot be fired by hand, in any case. *Wt:* 5.4 kg *Price:* \$2500 (R/—).

Complete System Package: The full kit is very rare. It consists of enough parts to build any one of the six weapons in the system, but only one at a time (each kit contains only one receiver group). The availability rating reflects the extreme scarcity of the kit. *Wt:* 10 kg (including canvas case and six magazines) *Price:* \$6000 (—/—). Ω

WEAPON TABLE

Type	ROF	Mag	Rng	Dam	Arm	Notes
Carbine	4	10	40	2	—	W, 1/2T
Rifle	4	10	50	2	—	W, 1/2T
MK23/XM207 (bipod)	4	10/33	60/80	2	—	1/2W
LMG (tripod)	4	0/33	70/90	2	—	1/2W
HMG	5	33	80/100	2	—	1/2W
Coaxial MG	5	33	110	2	—	—

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More Weapons

For Space: 1889 and Sky Galleons of Mars

By Bret A. Foland and Lester W. Smith

In the untamed regions of Space: 1889, a good weapon may often be all that stands between a character and certain death.

We offer the following new weapons for those referees and players who might like to try something out of the ordinary.

FIREARMS

Sometimes it is important to be well prepared for the unexpected. At such times, it can be annoying, to say the least, to find oneself armed with a revolver when a shotgun would be better, or with a shotgun when a rifle is needed. Combination weapons such as the two described here were created for just such contingencies.

Le Mat Revolver

The Le Mat revolver, invented by Dr. Jean Alexandre Le Mat, a Frenchman residing in America, might seem at first glance to be an overly large, unwieldy weapon. But in reality, it can be very effective in close combat due to its multi-barrel nature and heavy firepower. The weapon consists of a .44-caliber, nine-chamber cylinder that revolves around a central, .65-caliber shotgun barrel. Together, these features allow the weapon's user a total of 10 shots before having to reload, with one of those shots being a blast of "grapeshot." In fact, the weapon was often called the "grapeshot" revolver in reference to this last feature.

An earlier, percussion model of the Le Mat revolver was in great demand by the Confederate cavalry during the American Civil War, being favored by such notables as Jeb Stuart and General Beauregard. However, relatively few of the revolvers were ever actually made. Because of their rarity, Le Mat revolvers should be very hard to come by in any **Space: 1889** campaign. It is suggested that no more than one be available at any time, perhaps only one over the course of an entire campaign. *Wt: 3 lbs Price: £6.*

Drilling

A Drilling is a break-open, combination weapon with three barrels, typically used for hunting when it is not known ahead of time what the quarry will be. In the most common version of the Drilling, two shot barrels are mounted above a single rifle barrel. But occasionally, a Drilling may be found that consists of two rifle barrels above a single shot barrel. Usually, the double rifle barrels are of a larger caliber than that of the single-rifle-barrel version. The basic price for a Drilling is approximately £8, but the **Space: 1889** referee can adjust this upward to account for customized weapons and varying calibers. Drillings are readily available from civilian sources. *Wt: 10 lbs Price: £8 and up.*

ARTILLERY

Before the arrival of humans on Mars, Martian culture had reached a point of stagnation in which innovation had nearly died out. In the years before the onset of this stagnation, Martian engineers developed a number of interesting and innovative weapons which have never entered common usage for one reason or another. Two of these are listed below.

Thunderbolt Quick-firing Light Gun

The Thunderbolt is a variation on the theme of Earth's 15th-century Veuglaire, which uses a removable firing chamber. This removable canister allows the Thunderbolt to have a longer barrel than standard light guns, since the weapon need not be muzzle-loaded. The canister is held in place by one or more wedges in primitive models, or by a rotating screw in more advanced models. After firing, the crew loosens and removes the expended cartridge, replaces it with a loaded one, and tightens it in place.

This means of loading raises the gun's rate of fire somewhat, although three gunners are required to crew the weapon. The canister must be loaded with powder and shot in conventional fashion, but a number can be prepared ahead of time, at leisure, ensuring a better measured charge than

is possible in the heat of battle. The increased rate of fire is achieved at a loss of range, however, because the seal at the breech is usually poor (due to the corrosive effects of Martian gunpowder), and considerable pressure is lost, with consequent reduction in range. Despite this, Thunderbolts are still popular with some captains.

THUNDERBOLT TABLE

Weapon	Wt	Pen	DV	ROF	Crew	Rng	Cost
Thunderbolt	30	0	1	2	3	1/2	600

Lob Gun Incendiary Projectile

The incendiary round for lob guns is a projectile that combines some of the impact damage of a normal lob gun round with the incendiary traits of Martian liquid fire. In form,



the incendiary round consists of approximately a dozen small, stone containers of Martian liquid fire, banded together with iron to form a projectile nearly the same size as a normal lob gun round. The containers are scored to make them fracture upon impact, even with a wooden-hulled ship. The round is loaded into a lob gun in the same manner as a normal lob gun round. When the projectile is fired, one of the stone containers sometimes fractures in flight, which gives the round the appearance of a fireball as it flies through the air. The remaining containers burst and spill liquid fire when the round strikes its target. The fire level suffered by the target is determined by rolling 1D6 and subtracting the range in hexes from the gun to its target.

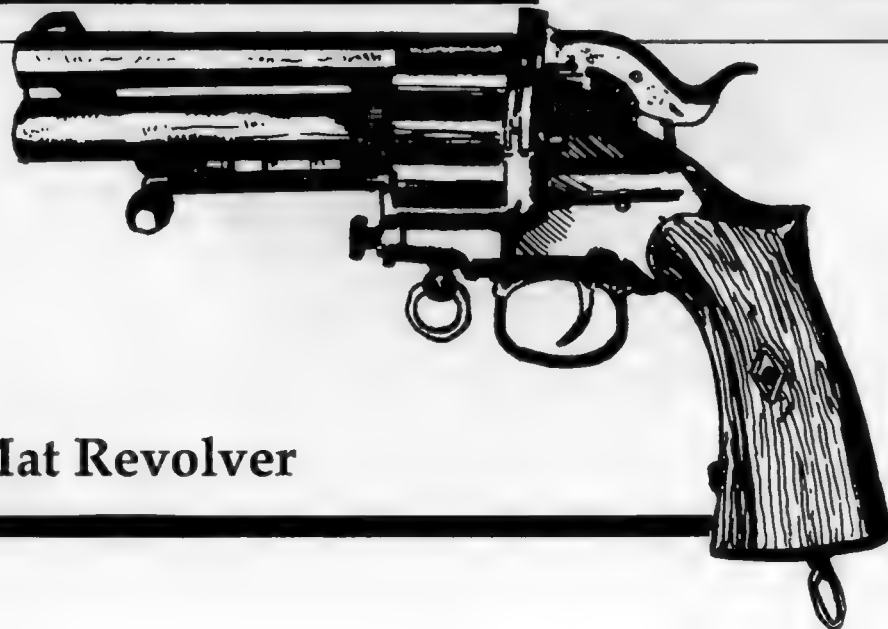
Impact damage is also caused by the incendiary round: A lob gun firing such a round is considered to have a penetration of 1 and a damage value of 3 (rather than the standard values of Pen 2 and DV 4). As well, there is some chance of a loss of trim critical being caused by an incendiary round, but because of the projectile's lighter weight, that chance is not so great as with a normal round. When a target is hit by an incendiary round from a lob gun, roll 1D6: On a roll of 1-3, a loss of trim critical occurs.

Because of the difficulty involved in constructing incendiary projectiles for lob guns, each round is considered to have a cost of £5. Players should be careful to keep track of exactly how many incendiary rounds a ship carries. If a hit occurs on a lob gun magazine containing incendiary projectiles, roll 1D6 for each such projectile to determine the level of fire that breaks out on the ship. Ω

SMALL ARMS FIRING TABLE ADDITIONS

Weapon	Shots	Mag	Reload	Wnd	Req Str	Save	Range
Le Mat Revolver							
Pistol	3	9	3	1-2	2	1	15
Shot	1	1	—	1D6/2	3	0	5*
Drilling (Basic)							
Rifle	1	1	1	2	3	1	100
Shot	2	2	1	1D	3	0	30
Drilling (Variant)							
Rifle	2	2	1	3	3	1	100
Shot	1	1	1	1D	3	0	30

*Shot barrel adds 1 to to-hit numbers at close-combat range (10 meters).



Le Mat Revolver

R.H. 89



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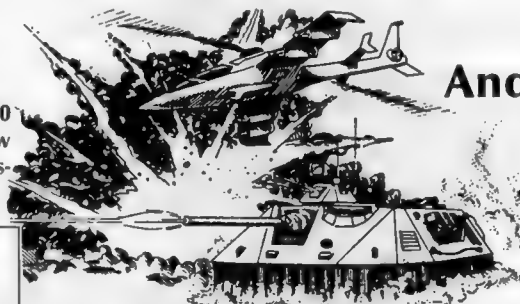
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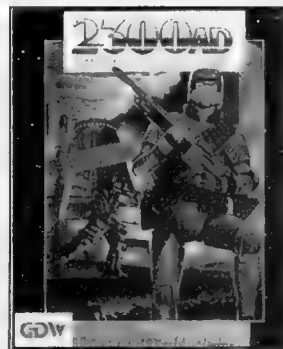
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A Simple Conversion Guide for Flying Vessels

Stephen Lawrence



Only a limited selection of vessels could be included in **Sky Galleons of Mars** when it was released, so GDW concentrated on providing a good generic mix of ships. The Martian vessels consist of a large and a small screw galley, and a large and a small kite. While the large vessels resemble the familiar *Whisperdeath* and *Hullcutter*, many vessels are not specifically represented. Furthermore, with only eight cloudships in the box, gamers were understandably reluctant to begin cutting them apart and experimenting with different configurations. This is compounded by the fact that parts of several ships are required in these conversions, and parts are often left over when the work is finished.

But now our worries are over: GDW is now making the vessels separately available in boxed sets. Converting the basic miniatures into the large variety of screw galleys, kites, and gunboats that ply the skies is now an easy task.

In order to undertake these conversions, you need a good *hobby knife* (a No. 1 knife with a No. 11 blade) and *plastic glue* (such as Testors Liquid or Pic Plasti-Stic, or a solvent-based glue such as Weld-On). Do not use a thick tube glue because it is more likely to mar the miniatures. *Sandpaper* can also be handy for removing gun mounts and sanding surfaces smooth on hull conversions.

Some of the more advanced conversions also call for the use of *hobby putty* (such as Milliput or Tamiya two-part ribbon epoxy) or a gap-filling cyanoacrylate (like the Pic Slow+Accelerator). Do not use a filler, such as Squadron Green Putty or most cyanoacrylates, because they will soften and warp the

plastic and may actually dissolve the miniature. Also handy are very thin *sheet styrene* (also called plastic card) and a *Dremel* or *Moto-Tool* with sander and cutting heads (be very careful with this tool).

Paints are a necessity—no matter how good the conversion is, some lines and slight imperfections will show up. Either enamels or acrylics will work. Despite the small size of the ship models, painting them is a breeze. The hard plastic of the models takes and permanently holds either enamel or acrylic paint. For suggestions on colors and techniques, see *Painting Your Models*, page 19.

Martian Ships

In this section we are going to go through every Martian ship that has been described to date in **Space: 1889** publications and explain how to build each from the parts included in the **Martian Skyships** boxed miniatures set.

As we do so, several terms will be used over and over again, so for clarity I'll try to cover them all here.

Large Kite: The large cruciform hull with a hole for an upright mast.

Small Kite: The medium-sized hull with a groove running across its deck for a crosspiece mast.

Large Screw Galley: The long, mastless hull.

Small Screw Galley: The small, mastless hull with a gangplank at both ends.

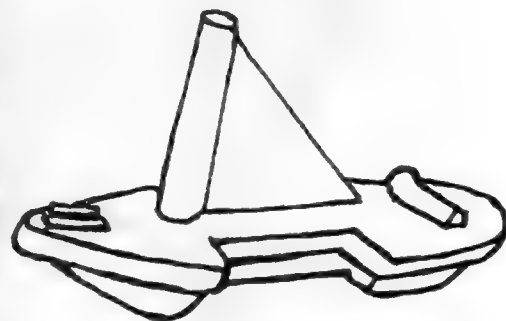
Forecastle: The large decked structure that makes up the front part of the ship.

Quarterdeck: The large decked structure that makes up the rear part of the ship.

Mounting Socket: The structure on the bottom of the hull into which the end of the base fits.

Outrigger: The two wings that extend to either side of the large kite's hull.

Sprue: The plastic "tree" to which the ship parts are attached.



Bloodrunner

The *Bloodrunner* conversion requires the hull of a small screw galley and the mast of a small kite. Cut the forward and

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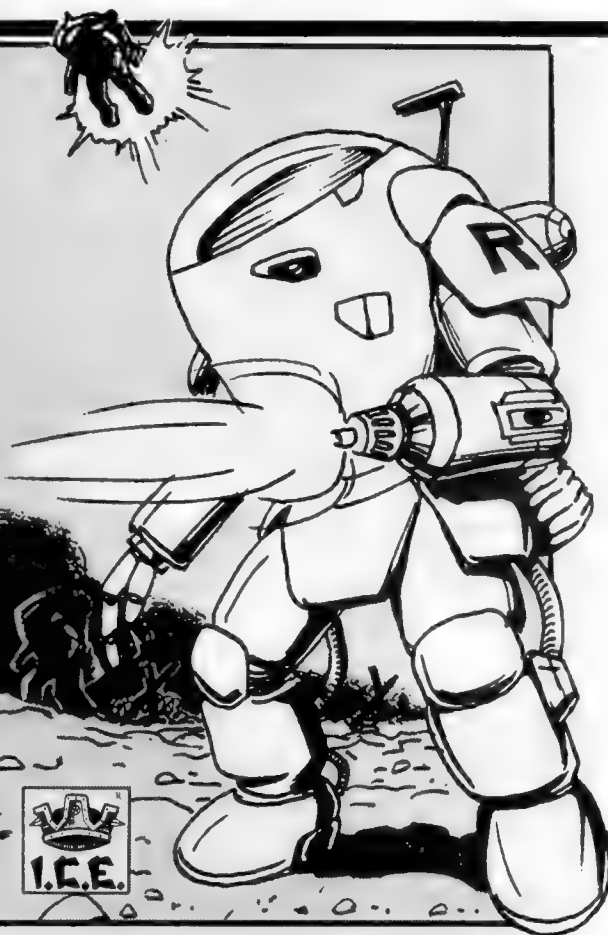
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Space Combat was designed to be easy to learn, but difficult to master. Every game starts with ten players, and as each is eliminated, the chances of the game ending will increase. Turnsheets are custom made on a laser printer to aid you in filling out your next turn. The games run about 12-16 turns. Cost is \$3.00 per turn. A rulebook (required before you can join) is only \$1.00.

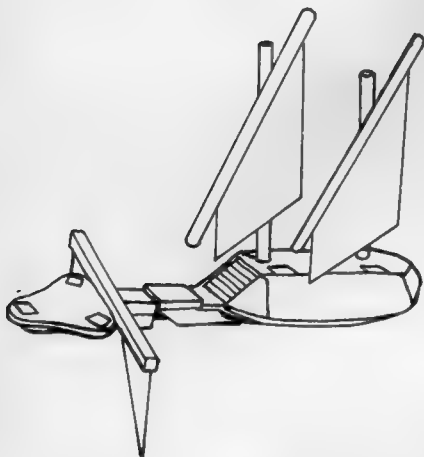
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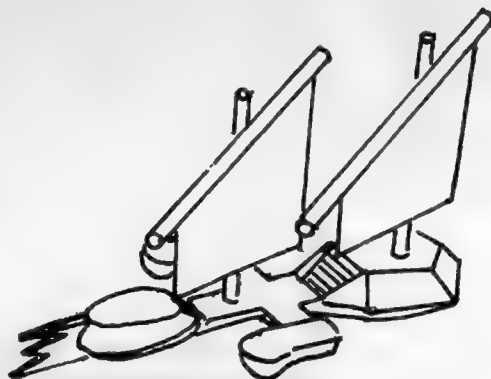
aft gangplanks off the hull. Sand the guns off of the rear gun mounts and use one of the gangplanks to make a single aft gun mount. Now cut one of the sails off the small kite's mast and glue it to the top of the hull as an upright sail.

deck, one immediately behind the stairs and one between the two aft gun mounts. Glue one of the large kite masts in each hole. You should, however, cut one-eighth of an inch off the bottom of the mizzenmast (the one to the rear) before gluing it in place, so that it is shorter than the mainmast.



Warm Winds

The main feature of the *Warm Winds* is that it is really big. For this conversion you will need two large kites and one small one. Start with one of the large kite hulls and cut off the forecastle and the two outriggers. Next, cut the stern off flat, slightly behind the two gun mounts on the quarterdeck, then sand the guns off the mounts. Now take the second large kite and cut the quarterdeck off immediately behind the stairs. Sand the guns flat on these two mounts and glue this piece to the back of the first hull. You now have an enlarged quarterdeck. Next, take the hull of the small kite and cut off the forward half of the ship, making the cut just behind the mounting socket. Sand the guns off this piece, and sand the bottom of the mounting socket until it is even with the bottom of the hull. Fill in the remaining depth of the mounting socket with putty. Now glue this to the main hull assembly. The last step is attaching the masts. Glue the small kite's mast in place in its normal bracket. Drill two holes in the quarter-



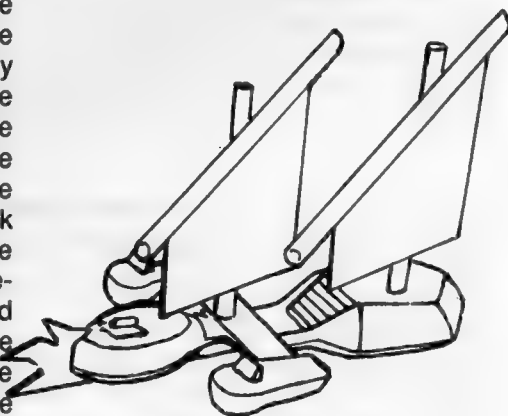
Skylord

The *Skylord* is simply a larger version of the *Whisperdeath* with its guns mounted belowdecks. For this conversion you will need one complete large kite plus one of the outriggers and the mast from a second large kite. Start by sanding the various gun mounts off the upper deck. Next, cut the deck of the outrigger away from the large structure at its end and cut the forecastle off the main part of the hull. Glue the short deck section from the outrigger where the forecastle was and then glue the forecastle to the end of this. This will extend the length of the ship and give it a more massive appearance. Finally, drill a hole in the quarterdeck just at the top of the aft stairs and glue a second upright mast in place. As with the *Whisperdeath*, a little bit of sheet plastic can be used to make a more elaborate ram if desired.



Swiftwood

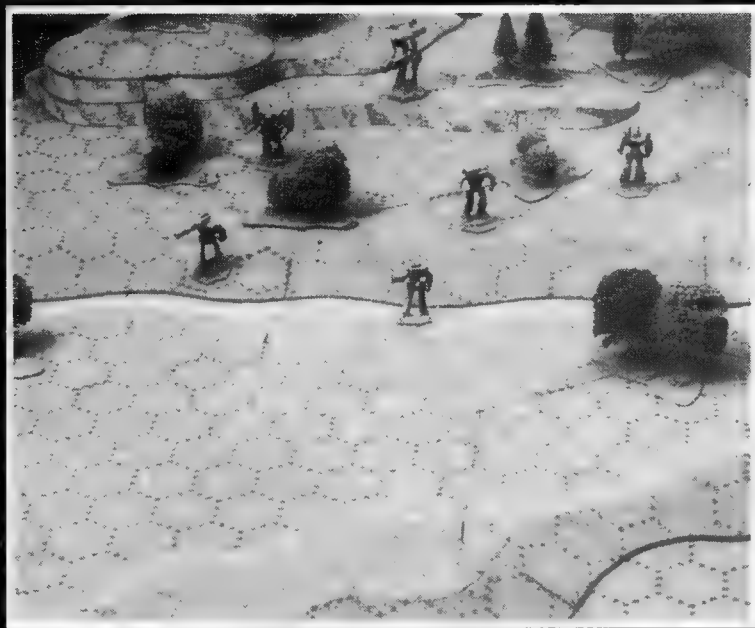
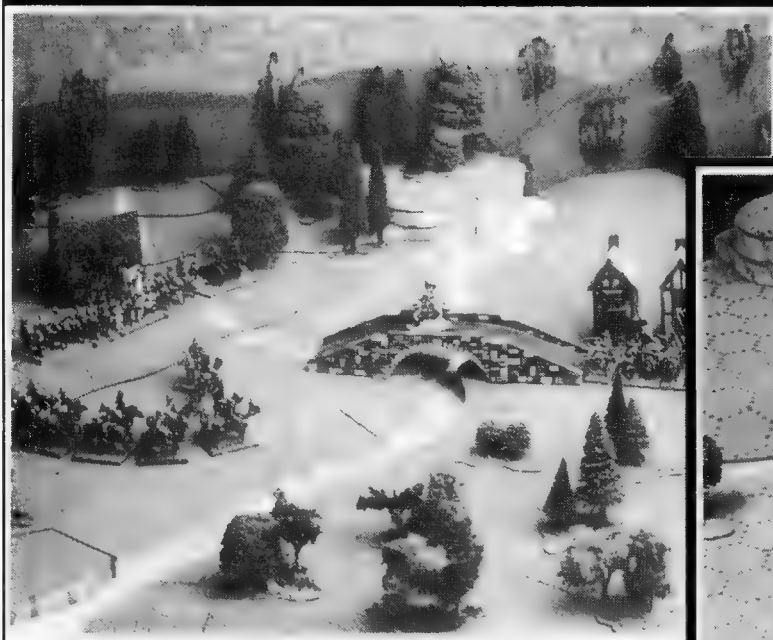
The *Swiftwood* conversion requires the hull and mast of one small kite, the hull of one large screw galley, and the mast of one large kite. Cut the quarterdeck off the small kite's hull and place it in your parts box. Now cut the forecastle off the screw galley and glue it on in place of the small kite's quarterdeck. This becomes the new bow of the ship. Now take the mast of the small kite and cut the two sails away from it. Glue the mast in its normal place, where it now serves as the ship's outriggers. Finally, drill a hole in the deck immediately in front of the crosspiece of the outrigger and glue the upright mast in place.



Whisperdeath

The large kite included in the current set is patterned after the *Whisperdeath*,

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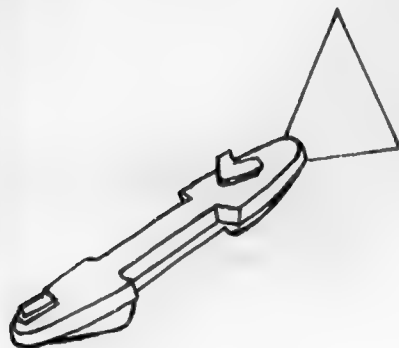
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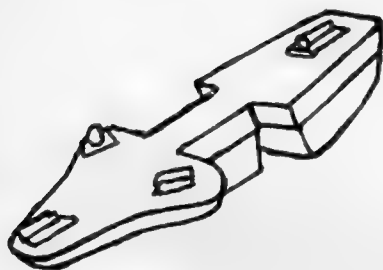
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and can be used as is. It has only one mast, though. To make an accurate version of the *Whisperdeath*, drill a hole in the quarterdeck just at the top of the aft stairs and glue a second upright mast in place. If desired, a little bit of sheet styrene can be used to make a more elaborate ram.



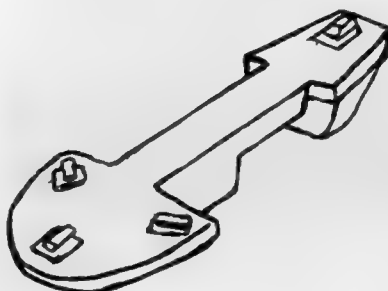
Small Bird

The model of the small screw galley was patterned after the *Small Bird* and may be used as is. If added detailing is desired, cut off the gangplanks at the bow and stern and add a rudder, cut from sheet styrene, to the stern.



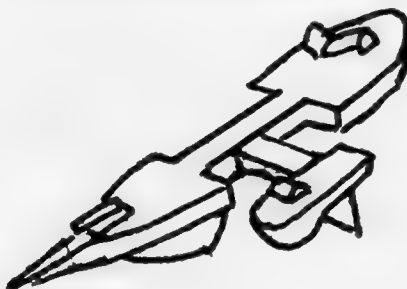
Clearsight

This conversion requires the hull piece from a small kite model. Cut away the central deck and hull from immediately behind the mounting socket to the immediate front of the quarterdeck. Now glue the quarterdeck to the main hull, thus shortening the hull. Fill in the mast hole with putty.



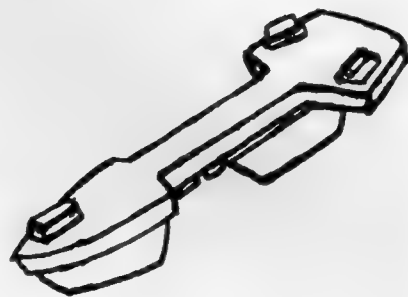
Endtime

This is a very easy conversion and requires only the hull of the small kite. The gun arrangement on deck is correct as is. Just take putty and fill in the hole for the mast. If desired, a small amount of putty can be used to round out the shape of the forecastle.



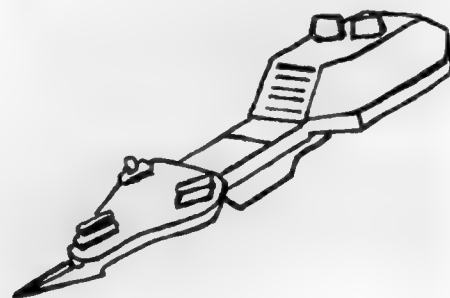
Fleetfoot

This conversion of the smallest of screw galleys requires a small screw galley and the left outrigger from a large kite. Cut the stern gangplank off the screw galley hull but leave the forward one in place. Sand the guns off the gun mounts and glue the outrigger to the left side of the hull. The outrigger will look better if you use your hobby knife to shave the sides of the deck connecting it to the hull. This should be done before you glue it to the hull. Finally, a small triangular piece of sheet styrene glued to the bottom of the outrigger represents the rudder.



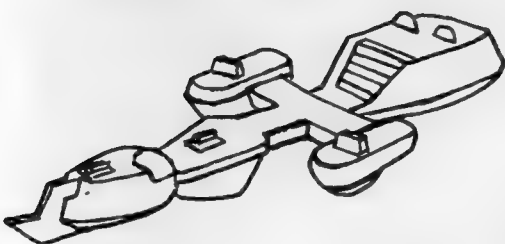
Sky Runner

This conversion requires only the hull of a small kite. Begin by cutting off the front of the hull just behind the forward gun mount and sanding the front into a smooth, gentle curve. This will now be the stern of the ship. Next, sand the bow of the ship (which used to be the stern) so it has a rounded shape instead of a rectangular shape. Finally, fill in the mast hole with putty.



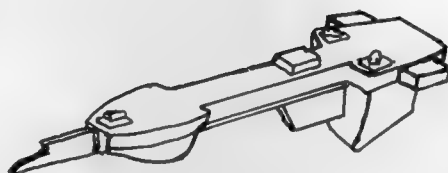
Glory Sled

These High Martian screw galleys require the hull of a large kite and a small kite. First, cut the forecastle and outriggers off the large kite's hull and put them in your parts box. Next, cut the forecastle off the small kite's hull. Use sandpaper to smooth the bottom of the hull and the remnant of the mounting bracket. Glue this to the front of the large kite's hull as the new forecastle. Finally, make a ram out of sheet styrene and add it to the new bow.



Fenian Ram

This conversion requires the hull of a large kite and a small kite. Begin by cutting the forecastle off the large kite's hull. Next, cut the back half of the hull off the small kite, making your cut just behind the mounting socket. Return the forward part of the hull to the parts box. Turn the back half of the small kite's hull around and glue it to the front of the large kite's hull, so that the stern of the small kite's hull faces forward. Now glue the forecastle of the large kite to the front of the ship, filling in any gaps with putty.

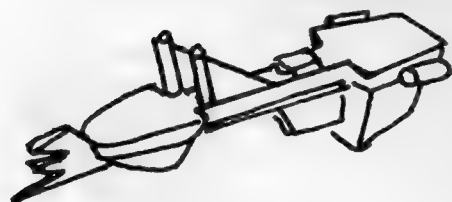


Hullcuttter

The model of the large screw galley is patterned after the *Hullcuttter* and does not require any conversion work. Some sheet plastic can be used to detail the ram, however, and that can improve the appearance of the piece considerably.

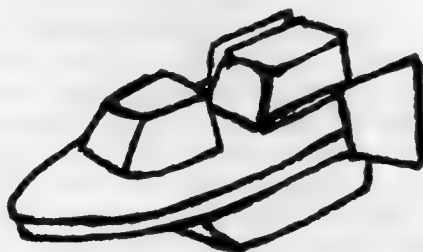
British Ships

Many of the aerial vessels of the European powers are very elaborate in their design and require complex conversions which are beyond the scope of this article. However, British ships have a commonality in design which makes it fairly easy to conduct simple conversions to model their most frequently encountered vessels. All of these will be undertaken using the three basic models included in the original *Sky Gallions of Mars*, which represent the *Aphid*, *Dauntless*, and *Reliant*.



Skyfire

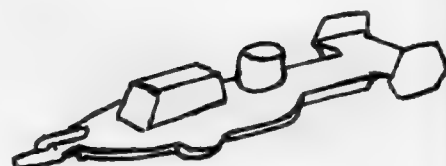
The *Skyfire* is similar to the *Hullcuttter*, only larger. This conversion requires one large screw galley and the mast from a small kite. First, sand the guns off the gun mounts, as the *Skyfire*'s weaponry is located belowdecks. Next, cut the two sails off the mast and glue them, standing upright, to the ship's deck. These represent the small auxiliary sails that the ship sometimes uses while cruising. Although the *Hullcuttter* has these as well, adding them to this model will give it a distinctive look. Finally, use thin sheet plastic to detail the ram, if desired.



Aerial Steam Launch

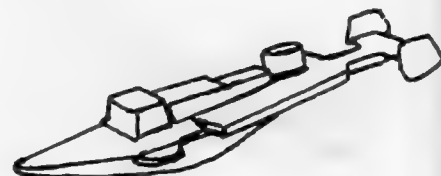
This conversion requires only an *Aphid* and some sheet styrene. Cut the tail off the *Aphid* immediately behind the

boiler. Cut the gangplank off so that the bow has a more rounded appearance. Trim the round wing mounts off the deck and cut two indentations in the deck on either side of the boiler. Now cut two trapezoidal rudders out of sheet styrene and glue them into the indentations you cut in the deck.



Locust

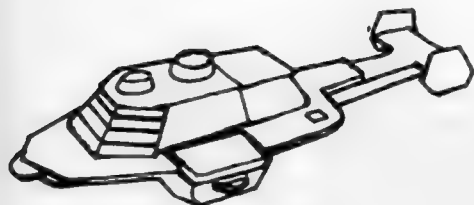
This conversion requires only an *Aphid* hull and a piece of sprue. Carefully trim the boiler off the rear of the *Aphid*'s superstructure. Now cut a short cylindrical section from the sprue. Glue this to the deck in place of the boiler to represent the *Locust*'s stern tower.



Macefield

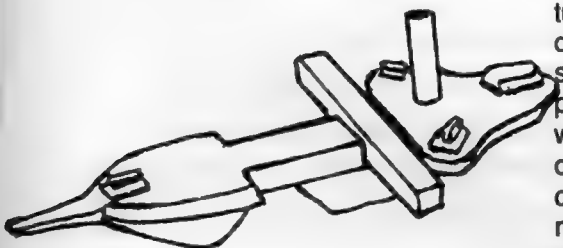
The *Macefield* requires both an *Aphid* and a *Dauntless*. Cut the tail off the *Dauntless* and return it to your parts box. Trim the forward hull of the *Dauntless* down so it is level with the deck forward of the bridge. Fill in the area between

the bridge and the gun tower behind it with putty and sand it smooth, so it looks like a continuation of the bridge. Cut away the rear third of the ship's boiler and replace it with a new gun tower cut from sprue, just as you did with the *Locust*. Now cut the tail off the *Aphid* just behind the boiler and glue it to the back of the *Macefield's* hull. (Note that if you have already done the steam launch conversion, you will have an extra *Aphid* tail to use for the *Macefield*.)



Triumph

This is a fairly simple conversion requiring a *Reliant* and the tail from an *Aphid*. Cut the tail off the *Reliant* just behind the gun tower. Sand the gun tower down and, using putty, extend the superstructure back to cover the boilers. Now glue the tail of the *Aphid* to the back of the *Reliant*.



U.S.S. Ranger

This is not a British vessel, but it is so easy to model that it seems foolish not to include it here. Begin by making the

Swiftwood conversion described in the Martian section above, but leave off the mast. Now find a small piece of plastic rod or piece of scrap plastic that can be filed into the shape of a smokestack, and glue it to the center of the quarterdeck.

Painting Your Models

Once you have completed your conversions, you will want to paint them. The finished model should be glued to its base and then spray painted with a single, even coat. If you don't want to invest a lot of time in this, pick an appropriate color and leave it at that. (Brown for Martians and gray for British is, of course, recommended.) With very little extra effort, however, you can add a great deal to the appearance of the ships by painting them in a "historical" fashion.

To make this extra effort, start, as before, with a coat of spray paint, but make it white or light gray. Be careful not to overdo this: It is easy to lose detail if too much paint is applied. The overall spray coat is important because the models, particularly the bases, have large, flat, smooth areas which tend to show brush marks. If you spray them first, you will have a slightly textured surface which your paint will adhere to evenly. It was common practice in all navies to have the decks done in a light, natural wood color or polished white, and you should do the same. Paint the decks either white or light tan. For steel-hulled European ships, the hulls and superstructures should be either gray or steel, with detailing picked out in black. Martian ships, however, are often flamboyantly painted, and individual captains have wide latitude in selecting their own colors. Contrasting upper and lower hull colors are common, with sails often matching the dominant hull color. Gun mounts should be painted black or brown, while guns should be painted black or brass. Merchant vessels are more often somber colors, perhaps a simple brown with white or linen-colored sails.

Once the basic painting is done, you may wish to add some special detail work. Two very easy ways of doing this involve decals and art markers. Many



hobby shops have a variety of heraldic shield decals available. These have emblems on them such as jumping fish, rampant lions, and coiled dragons, as well as more geometric designs such as shamrocks, stars, circles, bars, etc. These can be used to excellent effect in detailing ships, particularly on the large upright sails of kites. For example, if you have a green fish decal, you might paint a ship with a green hull and a yellow sail and then put the green fish on the sail to match the hull.

Art markers are an even more useful means of detailing ships, particularly colored fine-line markers. Martian ships are often painted over with contrasting filigree work, and this can be added both easily and expertly with a colored marker. You can use a black fine-line marker to add the lines of deck planking, and to outline the masts and booms where they lie against the sails.

You can also use a black marker against the vertical faces of stairs to make them stand out and give the impression of shadows. On British ships the black marker is extremely useful in drawing portholes and doors, as well as deck planking.

Conclusion

While this article doesn't cover every aerial vessel in service in *Space: 1889*, it does provide a wide variety of fairly simple conversions that will produce most of the ships you will want or need. By the time you have completed just a few of these conversions, you may find your appetite whetted for more adventuresome conversions. And the more conversions you complete, the more your confidence will grow in your own modeling abilities. After finishing a few of these conversions, you'll be ready to begin kit bashing and even scratch-building aerial gunboats of your own. Ω

By John A. Theisen

A New Plot Chart: Garrison Duties



Even though the duties are usually mundane and tedious, serving as a garrison commander is often a delicate balancing act. Fulfilling the needs of the planetary governor, working with (and against) the locals, preserving the laws of the Imperium, and making sure your own hide stays intact can combine to create a real challenge.

This new *Warhammer: 40,000* plot chart may be used in conjunction with the charts given in the Plot Generator section on pages 240 through 247 of *Warhammer: 40,000*.

For Warhammer: 40,000

01-10

Things have not been going well for you during the last few months. As the local garrison commander on this medieval world, you are responsible for ensuring the governor's safety. Half your guards are down with Birmingham speckled leprosy (there hasn't been an outbreak of that for 10 years, when B.S.L. germ virus grenades were last used). Meanwhile, the governor is due in a few days on a surprise inspection. The locals, as usual, are threatening to raise a ruckus.

11-20

Terribly pleased with yourself, you prepare an honor guard to receive your commanding officer. You have just been awarded a Good Conduct Medal for acting unfoolishly and avoiding trouble, and you were informed he would make the presentation himself. Suddenly, your aide-de-camp comes in and whispers that an Inquisitor will be coming instead. Now you aren't sure if there is a secret psyker in your unit or if this new, unwelcome visitor found out about that little deal you pulled oh-so-many years back.

21-30

Just when you think you know your men, something like this happens! A squad, including Old Man Thornton, went out last week on a standard patrol but suffered unexpected casualties, and came back minus Thornton and two others. Now, on a routine barracks inspection, you incidentally discover Thornton's bionic arm in Smitty's footlocker, and Smitty is nowhere to be seen.

31-40

A exceptionally beautiful and arrogant young woman in ordinary dress comes to your encampment, politely demanding to know specifically what you are doing to assist in the governor's tax-raising efforts. This comes as a complete surprise to you, because the governor doesn't even have a plan to increase taxes on this backwater world. She refuses to identify herself at first, and only during the evening does she don her power glove and pale gray robe—signifying a high standing in the Administratum.

41-50

It's been another rotten harvest on this mudball of a planet as stupid, unskilled farmers struggle to bring their meager crop in from the fields. The governor, attempting to avoid mass starvation, reluctantly orders you to dispatch one-third of your garrison and two-thirds of your available ground vehicles to assist in harvesting and transporting the crop. What the governor doesn't know is that Abdul Goldberg, who has sworn revenge against you, is waiting to strike—and this seems like the perfect opportunity!

51-60

For the first time in centuries, the long-dormant volcano, Mount Koomboroli, has erupted with ground-shaking fury, sending cinder boulders and sheets of molten lava down its heavily wooded sides. This has caused much of the area's surviving wildlife to flee, creating stampedes and general havoc. Frightened animals are trampling or attacking anything in their path, not to mention the local natives who worship the mountain and blame its eruption on your presence here.

61-70

Two days ago a lowly, black-robed scribe from the Administratum arrived in the area to conduct the most mundane of surveys ("How many hectares planted in this area? How many livestock, and what breeds? Which fertilizer works the best?"). He was found dead in his quarters this morning, and a non-regulation-issue needle pistol was located nearby. No one has stepped forward and claimed to know anything, but your second-in-command has been around all day with a hangdog expression.

71-80

This may be a civilized world today, but there's no guarantee it will stay that way. Currently, ugly rumors are passing throughout the larger cities, stating the planet is near the center of a developing warp storm, and it may be cut off from the Imperium for decades. The governor's hasty and heavily publicized departure off the planet for unknown reasons hasn't helped any. Numbers of



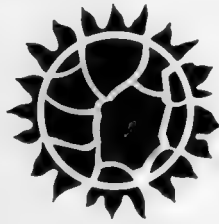
armed citizens, made angry and frantic by these stories, are marching on the governor's palace, and they aren't exactly planning for a picnic on the grounds. Though you have no evidence to prove or disprove the rumors, your duty is clear: to protect the palace and the valuable art and jewelry collections the governor left behind.

81-90

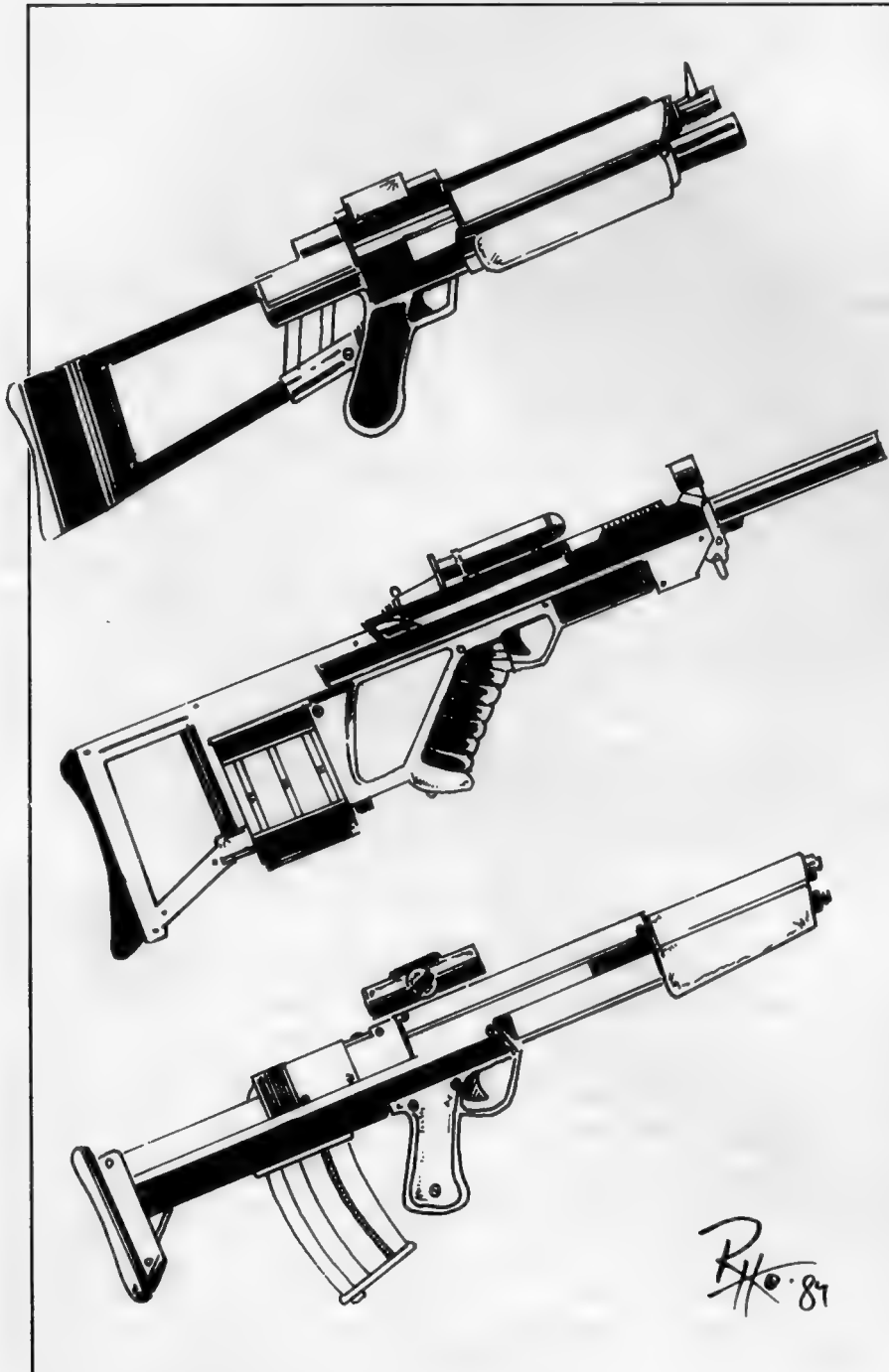
If you told them once, you told them a dozen times—stay out of that cave! But rookie trooper Adams did not listen and decided to go on an unauthorized spelunking expedition. He found more than he bargained for when he located the entrance to an underground tunnel—only this tunnel happened to be the home of a nest of several dozen hibernating crawlers, and they did not appreciate the company. Between the heavy mining equipment now beginning its operation just outside of town and Adams' little wake-up call, the ground vibrations these mining machines produce are sure to attract at least a few agitated crawlers in your direction.

91-00

Life is not always pleasant on paradise worlds, especially when you hear rumors that an Assassin may have been sent in to liquidate your planet's governor. Not that he is an unpleasant fellow to work for, but you recognize that he has been a little too casual toward his duties of late. More importantly, however, you know it is not uncommon for both the governor *and* his garrison commander (your humble self) to be removed. If an Assassin has been sent in, you have two clear choices: Either say nothing and prepare for the next governor if you do survive, or try to intervene somehow and risk the deadly wrath of the Imperium's Master of Assassins! Ω



3G Conversions for MegaTraveller



While no MegaTraveller conversions are directly listed in 3G, I had the game firmly in mind when I was writing the conversion notes, and now that I have a chance, I'd like to elaborate on how to customize your weapon designs for MegaTraveller, and the guidelines and exceptions you are likely to run into.

Greg Porter

In the conversion notes for 3G, I mentioned that future printings might have "approved" conversions for other systems. However, it is much easier to target a specific game audience by designing conversions and placing them where players of a particular system can find them, like a magazine devoted to that game. Hence, this article. Note that the terms DV, IA, and RC are exclusively 3G terms, and Max Range, Penetration, Attenuation, and Damage are MegaTraveller terms. They will always be capitalized. This way you know which game mechanics are being referred to, and which game they belong to. Tech level (TL) is used in both, and the appropriate system will be mentioned to avoid all confusion.

Tech Levels: Since TL is an overriding factor in all weapon designs, you will need a reliable scale for conversions.

The following scale is suggested.

TL CONVERSION SCALE

3G *MegaTraveller*

TL	TL	Example
4	0	
5	1	Hand cannon
6	2	Flintlock pistol
7	3	Percussion rifle
8	4	Cartridge rifle
9	5	Medium machinegun-5
10	6	Light machinegun-6
11	7	5.5mm Gatling gun-7
	8	Caseless ammo, laser carbine-8
12	9	Laser rifle-9
13	10	
14	12	
15	13	PGMP-13

Extrapolated Tech Levels

16	14	PGMP-14
17	15	PGMP-15

MEGATRAVELLER™

As you can see, the 3G scale doesn't go past **MegaTraveller** TL13. This is based on the premise that antigrav stabilization of hand weapons (i.e., PGMP-14 and 15) is not available in 3G at its highest tech level. However, all the 3G formulas can be extended past the normal limits, and you could use the highlighted rows to get the higher values. Antigrav stabilization can be used at **MegaTraveller** tech levels of 14+. It will be treated as gyrostabilization for 3G designs, but it only ameliorates recoil. Regular gyrostabilization must be bought as a separate item.

Likewise, a slight anomaly exists at the lower levels. The

Portable Weather Station

By Simon Ward

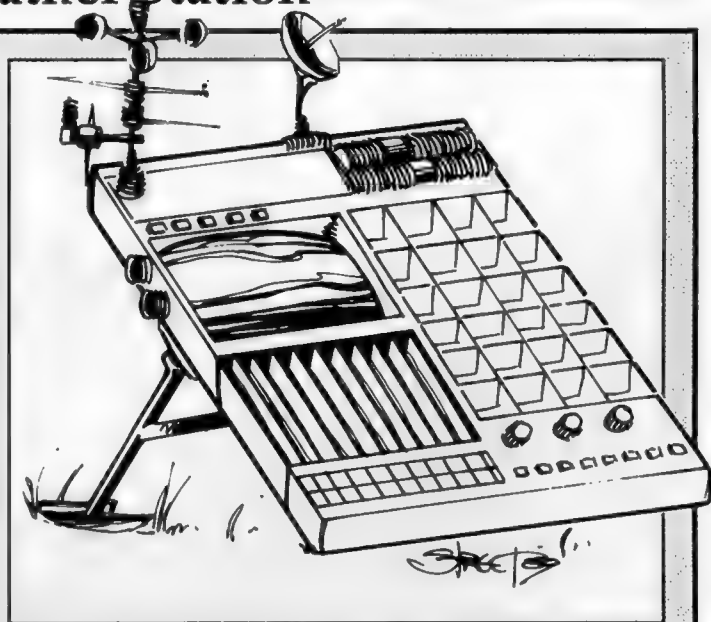
The portable weather station is a piece of equipment often found on survey or exploration missions.

The equipment basically consists of a large sensor device which collects and displays current meteorological conditions such as barometric pressure, temperature, humidity, electron flux density, wind speed, etc., and collects them into a convenient, easy-to-read form. A dish antenna is integral to the station and can be used to relay data to a ship's computer for further analysis if required. In this way, a fairly detailed meteorological picture of the immediate area can be found.

The Opton portable weather station (PWS) is designed for use in all conditions of extreme heat and cold (operating range -75 to +50 degrees C). But in insidious atmospheres (type C), the unit will fail within two to 12 hours in the open. The device is supplied with extensive circuit protection for operations in radioactive and other ionizing conditions, displays important data on a self-contained screen, and has provisions for the connection of a pocket computer for on-the-spot analysis.

The PWS is designed so that it can be carried on the back or by two integrally molded handles. A typical unit is about 1 m wide by 1 m long by 25 cm deep, and weighs about 20 kg. For this reason it is uncomfortable to carry on the back for long periods.

The PWS is powered by a solar array or by rechargeable internal batteries. A solar cell gives the PWS effectively unlimited power, and requires a world with a K5-class star or hotter for maximum efficiency. Internal batteries have a life of about 2000 hours before recharging is necessary, as the power consumption of the device is very small. The batteries can be recharged from a ship's power plant or commercially. As a last resort, weapon power



packs can be used, but the weapon is rendered useless until the pack is recharged. A power pack will power the PWS for about 150 hours.

At higher tech levels, the PWS is fitted with a small gravitic field generator to allow easier transportation. This unit is powered by the PWS, and the resultant power drain is negligible.

Size: 1 m square by 0.25 m deep.

Weight: 20 kg—1500 g with gravitic field generator on.

Tech Level: 12 (Gravitic field generator at TL15).

Prices: Cr15,000 (Cr20,000 per tech level above 13).

Spare Dish Antenna: Cr300 each.

Gravitational Field Generator: Cr3000 extra (TL15 only).

Commercial Battery Recharge: Cr50. Ω

DV VS. PENETRATION CHART

DV	Penetration
12	0
12-16	1
17-29	2
30-59	3
60-89	4
90-129	5
130-179	6
180-229	7
230-299	8
300-379	9
380-469	10
470-569	11
570-679	12
680-799	13
800-929	14
930-1069	15
1070-1219	16
1220-1379	17
1380-1549	18
1550-1739	19
1740-1939	20
1940-2149	21
2150-2369	22
2370-2599	23
2600-2839	24
2840-3089	25
3090-3349	26
3350-3619	27
3620-3899	28
3900-4189	29
4190-4489	30
4490-4799	31
4800-5119	32
5120-5449	33
5450-5789	34
5790-6139	35
6140-6499	36
6500-6869	37
6870-7249	38
7250-7639	39
7640-8040	40

Add 10 to previous difference per +1.

high-energy storage postulated in 3G does not become available until a 3G tech level of 13, which corresponds to a **MegaTraveller** tech level of 10, but the first laser weapons appear at **MegaTraveller** TL8. You can assume either that the weapons are built according to the guidelines for 3G TL12 (i.e., heavy, low ROF), or design them using the 3G TL13 energy storage rules, but with TL12 lasing apparatus, etc.

Other variances are due to short time ranges for a given tech level, or overlap between eras. For instance, **MegaTraveller** TL8 and 9 represent Terran technology advances by 1990 and 2010, while 3G has TL11 representing 1970

and TL12 representing the year 2000.

Weapon Range: The Range Classes in 3G translate well into **MegaTraveller** terms. See below.

WEAPON RANGE CLASSES

3G RC (Aiming)	MegaTraveller Maximum Range	3G RC (Damage)	MegaTraveller Attenuation
RC1	Medium	RC1	1
RC2	Long	RC2	2
RC3	VLong	RC3	2
RC4	Distant	RC4	3
Artillery	VDistant	Artillery	4

So, for example, a 3G weapon with an RC of 2/2 would have a **MegaTraveller** Max Range of Long, and the Attenuation number after its Penetration would be a "/2." A sample of this might be the 9mm autopistol listed on page 76 of the **MegaTraveller Player's Manual**. The only conflict here is that large assault rifles (like the 7mm) have a maximum range of Distant rather than Long, but with modern aiming aids, hits out past 500 meters are quite possible for a long-barreled weapon.

Penetration and Damage: The all-important Damage conversions are next. The DV in 3G is a measure of the armor penetrating ability of the projectile or beam, and so will translate into the Penetration rather than the Damage number. The table to the right provides DV to Pen conversions.

The DV that the Penetration will be based on is modified as listed on page 37 of 3G. Hollow-point rounds use 70 percent of the DV; AP rounds (**MegaTraveller** KEAP rounds) use 150 percent of the DV; and HE rounds use 50 percent of the DV.

Example: A modern (**MegaTraveller** TL7) 20mm round has a DV of about 160, which would give it a Penetration of 6. However, the 3G number is not based on an AP round. AP rounds increase the DV by 50 percent, in this case up to 240, which translates out to a Penetration of 8. If the round were **MegaTraveller** TL8, the Penetration would be 9, but in this case, the DV might be higher for the tech level as well.

The Damage of the weapon is based on its ability to disrupt tissue and/or incapacitate a person. So, a weapon that penetrates very well but only leaves puncture wounds will do less damage than one which has less penetration but blows gaping holes in the target. In **MegaTraveller**, almost all direct penetration rounds do three points of damage. Really large attacks of this type will do more but will not increase at nearly the rate Penetration does: Almost any bullet can go in one side of a person and out the other, and any energy the bullet or beam has left after this is effectively lost. Shotguns have a Damage of 4, but this reflects a large number of low-damage pellets. With slugs, a Damage of 3 is more likely for shotguns—but with a higher Penetration, which would be based on the 3G Damage Value.

The Damage of other types of rounds is based on the adjusted DV calculated for Penetration. For instance, HE rounds only get 50 percent of base DV to reflect their lower penetrating power, but anything getting through armor gets

a 300-percent bonus. For example, a bullet with a DV of 40 would go to a 20 for determining Penetration, which would be a Penetration of 2. A DV of 20 getting a 300-percent bonus would go to 80, which would give the bullet a Damage of 4. Compared to a normal bullet which would have a Pen and Dam of 3 and 3, an exploding round would have a 2 and 4. A KEAP round for this weapon would get a +50 percent to DV, going to 60 (Penetration of 4), but the DV for Damage would go from 60 to 30, which is still in the range of normal firearms, and would be treated as a 3. The disadvantage of the extra Penetration is increased cost per round.

This system does not work as well for large rounds, as the damage figure is not affected by the Penetration of the weapon (compare howitzer and HIVEL gun charts, page 76-77 of the **MegaTraveller Referee's Manual**). To best conform with **MegaTraveller**, use the Damages given for the size of the round, regardless of the Penetration.

Optional: For HIVEL guns, $\text{Damage} = 2.7 \times 10^{0.2 \times \text{Pen}}$.

Inherent Accuracy: This does not usually show up in **MegaTraveller**, but can be used. Most weapons get no bo-

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nuses due to pointing ease, so we will round all favorable modifiers down. Essentially, if a weapon has an IA of 3, it gets a +1 to hit due to its design. If the weapon has an IA of 5 or 6, it gets a +2. For pistols, an IA of 3 would only be found in an expensive target pistol, and an IA of 5 or 6 would only be found on specialized sniper rifles.

Initiative: Again, this would be an optional rule for **MegaTraveller**. The Initiative of a weapon is added to or subtracted from the tactical point pool. So a person with a bulky weapon (poor Initiative) is more likely to act after a person with a compact weapon (good Initiative). An example

Helipack

By Simon Ward

A device often used by adventurers or survey teams, the helipack represents the ultimate in rotary wing technology, and enjoyed universal use until the advent of the personal grav-belt.

Basically, the helipack is a collapsible mini-helicopter, consisting of a large backpack and a "kit" of parts designed so that the helipack can be assembled with ease in any situation. These parts are a detachable rotor, a cam rod for connecting the rotor to the drive mechanism, and various clamps for attaching extra bits. Also provided are a pair of control columns for pitch/roll control and rotor speed adjustment. To control forward velocity, the pilot uses his body mass. A detachable antenna is included.

The backpack is powered by an internal solar array but can use a backup supply of hydrogen, either from cylinders or by cracking water. Cylinders are slung below the base of the pack. Each cylinder holds about 100 liters of H_2 under high pressure and will power the pack for about 12 hours. Not all machines are perfect, however, and the helipack is quite capable of producing a significant IR exhaust, making detection rather easy!

The backpack measures 0.75 m by 1.0 m by 0.25 m and weighs about 25 kg with all the peripherals in place. The components are all collapsible and will fit in a case 50 cm by 15 cm by 15 cm quite comfortably. The components weigh 10 kg on their own.

Flying the helipack is something that is within most adventurers' capabilities. However, tricky maneuvers should be subject to roll of 9+ to avoid mishap, DM+ Helicopter or Rotary Wing skill.

Helipacks are not restricted by law level, but on many civilized worlds, flying in cities is not allowed. To allow the helipack to function, the world atmosphere needs to be



Thin (type 4) or greater, and the world size should be ideally 5+. It is not possible to fire a weapon from the air; any attempts to do so will inevitably result in a loss of control. If the player flying a helipack is hit in combat, there is a chance that the backpack will be hit (Roll 7-, DM+4 if evading. Treat backpack armor as cloth-1). If the backpack is hit, roll 1D to determine what is hit: 1-2, rotor assembly; 3-4, cam rod; 5, backpack; 6, cylinder (if no cylinders, treat as a hit on a flyer). Hits to the cam rod or rotor will result in a control loss with appropriate results. Backpack or cylinder hits should be administered by the referee. *Note:* By TL12, the helipack will be phased out. For every tech level above 12, subtract Cr500 from the price of the pack and 2 kg from the all in weight.

Size: Backpack, 0.75 m by 1.0 m by 0.25 m; case, 50 cm by 15 cm by 15 cm.

Weight: 25 kg complete (backpack 15 kg, components 10 kg; -2 from all in weight per tech level above 12).

Tech Level: 9.

Prices: Complete (backpack and components), Cr2500, -500 per tech level above 12.

Spare Component Packs: Cr750, -50 per tech level above 12.

Spare Hydrogen Cylinders: Cr15.

Cylinder Refill at Commercial Rates: Cr5. Ω

would be a person with a big shotgun vs. a person with a body pistol.

AV and BP: Again, **MegaTraveller** does not use these terms, but you can keep a record of them as optional attributes. Multiply the AV by 2, and check on the DV vs. Penetration Chart listed earlier. Do the same with BP.

The first number is the resistance of your weapon to damage. If it is struck, and if the Penetration of the attack is less than or equal to this number, your weapon only takes superficial damage. If the Penetration is greater, your weapon has taken internal damage. If the Penetration is less than or equal to one-fourth of the structure points calculated from BP (rounded up), the damage is Minor. More than this is Major damage, and if all points are lost, the weapon is totaled.

Recoil: This is fairly simple. Weapons with no recoil are treated as *low*. This includes lasers, rocket launchers, and recoilless rifles. *Medium* is any railgun, slugthrower, or particle beam/plasma weapon with a DV of less than 90. *High* includes railguns, slugthrowers, and particle beam/plasma weapons with DVs of 90 or more.

Rate of Fire: Since **MegaTraveller** combat rounds are six seconds long, equivalent rates of fire are very high. Essentially, any weapon capable of emptying its ammo load in six seconds or less is capable of rapid fire. Autofire weapons which can fire 10 rounds per second get two autofire targets. An ROF of 20 gets three targets, and an ROF of 40 gets four targets.

Signature: The signature is based on a variety of factors, such as the mechanism of damage (high-energy photons vs. lead), the means of propelling a projectile (gauss vs. CPR), and the velocity of any projectile (subsonic vs. supersonic). However, they can generally be classed according to the chart below.

SIGNATURE CHART

<i>Weapon Type</i>	<i>Signature</i>
Conventional gun with subsonic projectile	Low
Conventional gun with supersonic projectile	Medium
Conventional gun with a Penetration of 5+	High
Silencer	-1 level
Shotguns	Pen of slug
Any recoilless rifle	Low
Subsonic rocket	Low
Supersonic rocket	Medium
Any railgun or gauss weapon	Low
Any MegaTraveller TL8 laser	High
Any MegaTraveller TL9-12 laser	Medium
Any MegaTraveller TL13+ laser	Low
Any particle beam or plasma weapon	High

Malfunctions: Again, not a normal **MegaTraveller** weapon attribute. On a "standard" weapon (.5-percent malfunction chance), any to hit roll of 12, followed by a D6 roll of 6, will indicate a weapon malfunction that will prevent fire in the next combat round.

If the malfunction chance is 1.25 percent or 2.50 percent, there is a chance of critical failure (optional).

See the Malfunction Chance Table.

MALFUNCTION CHANCE TABLE

<i>Malfunction Chance</i>	<i>2D roll</i>	<i>1D roll</i>
0.50%	12	6
0.75%	12	5-6
1.25%	12	4-5
		(6 is critical)
2.50%	12	1-3
		(4+ is critical)

Ammunition Compatibility: Since **MegaTraveller** tech levels are more widely spread than the ones in 3G, it would be reasonable to say that among weapons of the same caliber, ammunition is compatible only if from the same tech level and from the same planet, and even this may be stretching it. If you have detailed corporate intrigue, it would not be uncommon to have competing weapon manufacturers design weapons that would use their competitor's ammunition, but not vice versa (like this article lets you use 3G guns in **MegaTraveller**, but doesn't tell you how to do the reverse).

SPECIAL CASES

Of course, there are exceptions to these guidelines. You've already seen some, but here are some specific ones for the different weapon types.

Conventional Weapons

Even though this category has the largest design section, a few special notes apply.

Grenades: For purposes of Penetration and Damage on grenades, use a DV in the middle range that corresponds to the Penetration of the equivalent grenade on page 78 of the **MegaTraveller Player's Manual**. Multiply this DV by the ratio of the grenade volume to a "standard" grenade to get an adjusted DV. Use this DV to determine the Penetration of the grenade.

The same applies to the Damage of the grenade, and also to the Danger Space (round Danger Space up), using the lowest DV of the range for Danger Space with a ".5" term. This applies to both regular and HEAP grenades.

Example: The standard grenade volume in 3G is 113cc. So, a **MegaTraveller** TL7 mini-grenade with a volume of 60cc would work as follows:

The HE version has a Penetration of 9, which is a 3G DV of 340. Then, $60\text{cc}/113\text{cc}=\text{Damage of } 8$, which corresponds to a DV of 265. So, $265 \times 0.531 = 141$, which is a Damage of 6. The Danger Space of 3 corresponds to a DV of 45, which goes to $45 \times 0.531 = 24$, which is a Danger Space of 2. In this case, the smaller Danger Space, Damage, and Penetration take into account a smaller number of fragments, which have a lower cumulative effect.

Guided Rockets: At short range, a guided rocket simply counts as a direct-fire weapon with a bonus to hit. The bonus is generally +2 to hit per 25 percent of guidance, with increments of 15 percent needed per +1 (i.e., a 40-percent addition for guidance would be a +3 to hit).

Most of the time a rocket will reach its target in one round (six seconds). If not, another roll must be made for each round of flight time. The maximum chance to hit is based on the level of guidance.

CHANCE TO HIT TABLE

<i>Guidance</i>	<i>Task is Never Easier Than</i>
+1 to +4	Difficult
+5 to +6	Routine
+7 to +8	Simple

For self-guided rockets, use the fire-controlled difficulty profiles on page 72 of the **MegaTraveller Players' Manual**. Increase the difficulty by one level, and then apply the guidance bonus and user skill.

Example: A **MegaTraveller** TL10 man-packed SAM with a bonus of +4 is fired at a target that is Distant. This goes from being a Difficult task to a Formidable one, offset by the missile's +4, which is sort of a default efficiency for guided missiles. A +6 would be possible at this tech level and would have a better chance to hit. Remember that the user's skill in initial aiming also applies, as do any special guidance effects of that tech level (like early heat-seekers homing in on the sun).

Smart Weapons: These simply provide a bonus to hit,

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which is figured as for guided rockets and is subject to the same tech level restraints for target acquisition.

Proximity Rounds: Assume a miss by a distance equal to each point the roll is missed by, squared. So, a miss by three is nine meters off, etc. The absolute maximum distance of a miss is the magnitude of the miss squared in percent, times the range to the target. So, a miss by three at a range of 10 meters would be 0.9 meters off. If a miss occurs that is equal to or less than the bonus of the proximity round, any warhead of the round will go off. Naturally, you design your round to have a sufficient danger space to affect

Magniviewers

By Simon Ward

Magniviewers are the ultimate enhancement of the humble binoculars. They use the latest available technology to combine the powers of infrared and light intensification with normal magnification.

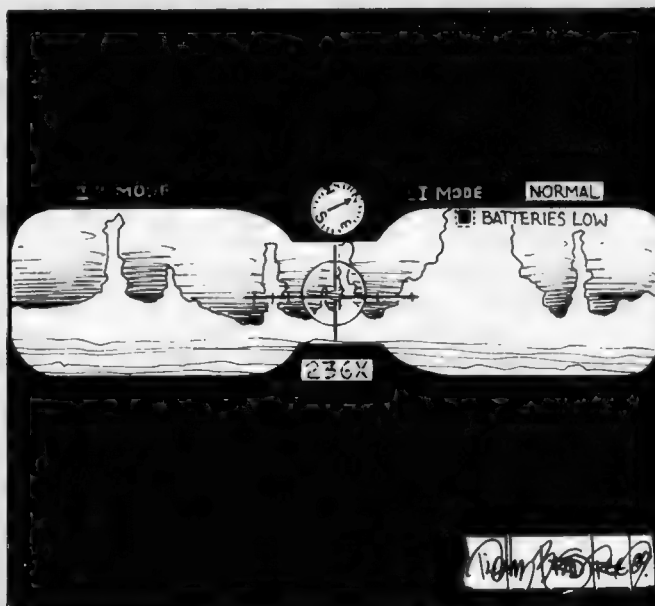
Outwardly, a pair of magniviewers looks like a small black box about 25 cm long by 15 cm wide by 5 cm deep. It is contoured to fit the hands comfortably and has micro-switch controls on the finger rests. A case and carrying strap are also supplied.

Magniviewers are generally capable of three different modes.

- 1. IR Mode:** The device acts as IR goggles but can magnify up to 16× without serious blurring of an image. This eliminates negative DMs due to darkness.
- 2. LI Mode:** The device acts as light intensification goggles with up to 128× magnified image in monochrome. This eliminates negative DMs due to darkness.
- 3. "Normal" Mode:** The device acts as normal binoculars with up to 256× image magnification. Regular use eliminates enemy surprise DMs.

The viewer readout also shows a compass bearing (the direction faced), the current mode, and the magnification power. The built-in computer can be programmed, via a portable keyboard, to pick out specific targets by IR signatures (Computer skill applies). The viewers can also be connected to a gunnery computer or similar device to increase combat DMs (this is known as LOST—Line Of Sight Targeting).

Magniviewers are powered by a rechargeable internal battery with a life of about 2500 hours in normal use. The battery can be recharged via a ship's power plant or through



commercial recharging service. Spare batteries are available, of course.

Magniviewers are normally issued to scouts and forward observers at TL14-15, but various models are available on the civilian market. Any military character at TL14+ may have been issued a set at the referee's discretion.

Size: 250 cm by 15 cm by 5 cm.

Weight: 2 kg.

Tech Level: 14.

Prices: As follow.

Magniviewer Unit: Cr2500.

Spare Batteries: Cr5 for two. Negligible weight.

Commercial Recharge: Cr20. 0

	<i>Ammo</i>		<i>Pen/</i>		<i>Max</i>	<i>Autofire</i>	<i>Danger</i>			<i>Difficulty</i>
<i>Name</i>	<i>Notes</i>	<i>Rds</i>	<i>Atten</i>	<i>Dam</i>	<i>Range</i>	<i>Targets</i>	<i>Space</i>	<i>Signature</i>	<i>Recoil</i>	<i>as</i>
Autorifle-6 (5.5mm)	—	30	3/2	3	Distant	2	—	Med	Med/R	Rifle
	KEAP	30	4/2	3						
	HP	30	3/2	4						

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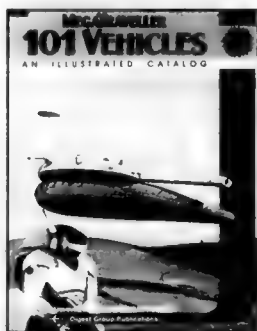
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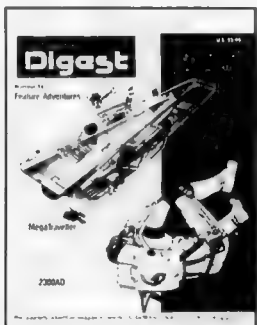
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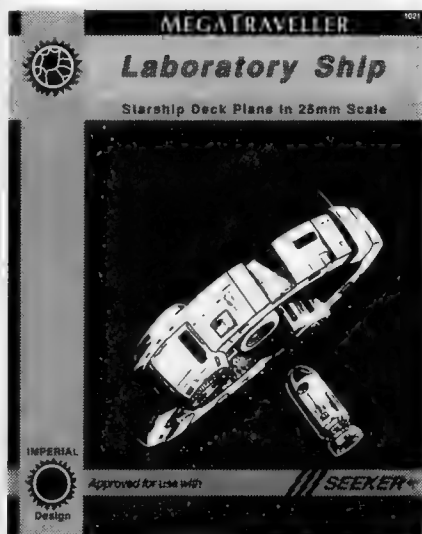
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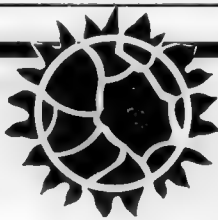
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Tugs: The Unsung Champions of Space

Hercules Space Tugs

Tugs are those modest boats one sees maneuvering behemoth freighters through narrow harbors. These unsung champions have as large a role in space as they do in real life.

This article provides two examples of typical tugs, as well as their raw statistics. A complete Universal Craft Profile is not provided. Any tug which is to be the scene of an adventure should be generated from scratch using these guidelines.



HERCULES MKII

Origin: RTK, an in-house division of Ling Standard Products.

Type: Prime mover, recovery vehicle, vacuum only.

Mass: 6700 tons.

Crew: 12 officers, 45 ratings.

Performance: 6G.

Craft: Two 50-ton cutters.

Fuel: Integral scoops and on-board plant.

User: Ling Standard Products.

History: The *Hercules* tug was developed by RTK in 1080 in response to LSP demand for a more powerful vehicle to use in its service/maintenance division. Design parameters called for a multipurpose vessel capable of maneuvering transport barges within the confines of highport and servicing malfunctioning LSP-contracted freighters in system. The original *Hercules* design was plagued with flaws, and an early prototype exploded due to power plant overload in 1083. RTK suffered a serious loss of face and returned to the drawing board. After two more years of research, the present design was produced. Initial prototypes proved effective, and *Hercules* MkII was sparingly distributed in the Spinward Marches in 1087. Field trials proved highly successful, and the *Hercules* entered full production in 1088-164.

Hercules is fitted with an RTK 206/2 power plant and Earnhart XT4-106 fusion drives. This gives it tremendous power to move massive loads. *Hercules* is recovery rated to 50,000 tons and maneuver rated to 200,000 tons. Mounted on the craft are two 200-ton Hollister magnetic pads, one in the nose and one mounted dorsally. These allow the vessel to lock onto barges and other large ships during the maneuver process. For recovery of nonmetallic loads, the ship car-

ries a wide assortment of cable and other towing apparatus. The belly of the ship contains a 500-ton recovery bay capable of holding damaged free traders. Coordination of ship systems is accomplished by a Pharalax AI15-3 computer.

HERCULES MKIII

Origin: LSP Military Technologies Group.

Type: Naval recovery vehicle.

Mass: 6700 tons.

Crew: 13 officers, 51 ratings.

Performance: 6G.

Craft: None.

Fuel: Orbital refueling required.

User: Imperial Navy.

History: The Imperial Navy bought the successful *Hercules* design from Ling Standard Products in 1093 with the intent of using it as a recovery vehicle for Imperial fleet actions. As part of the sale, the development contract was awarded to LSP/MTG in 1093-203.

Although the general design remained the same, LSP/MTG added armor to the ship and upgraded the computer to a Pharalax AI15-3B model to help resist possible battle damage. Sandcaster weaponry was also installed.

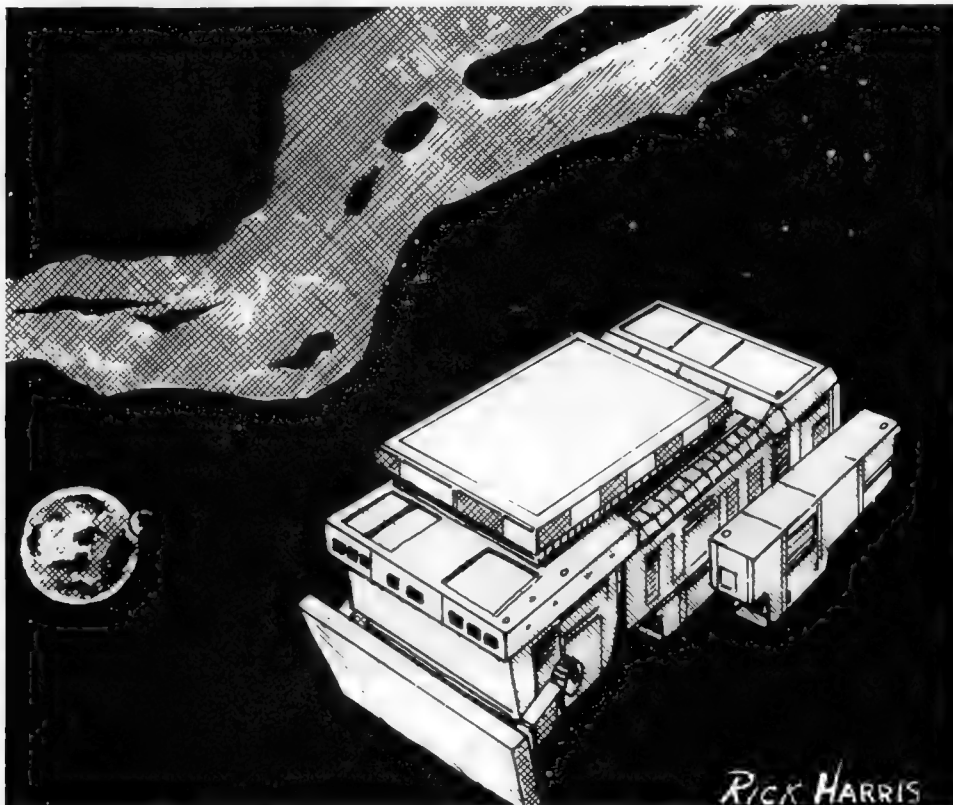
Small craft and fuel treatment were eliminated; tonnage saved was incorporated into a 260-ton recovery bay capable of handling four heavy fighters.

The *Hercules* III is jump carried to the target system by a tender.

REFEREE'S INFORMATION

The recovery rating is the tonnage in excess of its own mass that the *Hercules* can move through space at 1G or more. This is useful for salvaging disabled ships in system and towing them to highport. The maneuver rating is the tonnage in excess of mass that can be moved at .25 G (in *IISS Ship Files* by Games Workshop, Ltd.) It is established on page 24 that .25 G equals orbital correction). Maneuver rating is the tricky maneuvering of barges or ships through the confines of highport or drydock.

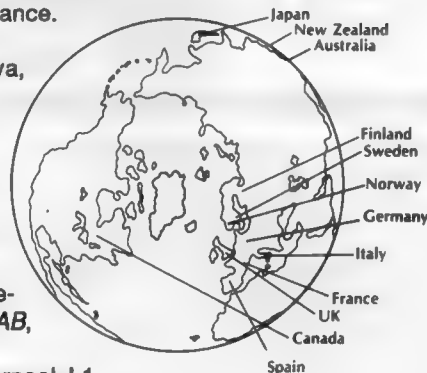
Calculate a tug's rating by multiplying its thrust factor by 50. Divide this number by the sum of the target's tonnage and the tug's tonnage to yield the number of Gs the combination can move. This number equals the thrust power of the target if it had its own maneuver drive. Tugs have a thrust factor equal to their maneuver drive tonnage. Additionally, a tug must supply EP equal to the amount the target would generate if it possessed Power plant-1. This is 1 EP per 100 tons of target. Targets beyond a tug's rating require multiple vessels to accomplish recovery or maneuver. Ω



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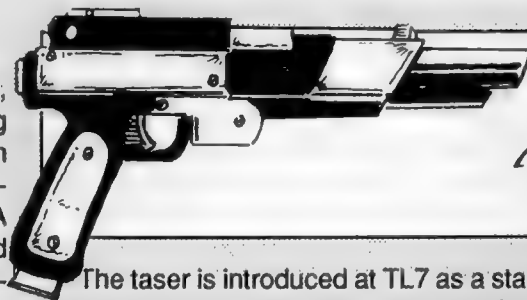
Taser

By Kevin Barry

The taser serves as a shipboard security weapon, capable of rendering a subject helpless without causing permanent physical injury by passing a current through the nervous system. It consists of a long-barreled handgun powered by a battery inserted into the handgrip. A cartridge which contains a thin dart about 50 mm long and a thin prewound cable 5 m long is attached to the underside of the weapon. When the trigger is pulled, the dart is electrified and with little recoil is propelled at very low velocity toward a target. The cord length restricts the range of the taser to that of a melee weapon.

Damage is special—the taser is not a slugthrower and does not deliver any damage upon impact due to low kinetic energy. Instead, following a successful hit, a current will be passed through the target's body, temporarily paralyzing the nervous system. The victim will be unable to move and will fall unconscious. Dexterity is temporarily reduced to zero. After 10 minutes or so, the subject will recover normally; dexterity returns thereafter at a rate of one point per 10 minutes.

Due to the space required for the cartridge, the taser may only fire one dart before reloading is necessary. The dart is still connected to the gun after firing. If the dart misses its target, it may be retracted during the next combat round and used again. If it hits its target, it is stuck and must be detached before it can be retracted and used again (this takes two combat rounds). The cartridge can be detached and replaced with a new one in one combat round. The drawback of having only one shot is outweighed by the advantage of a low recoil and the fact that a successful hit will instantly render a subject harmless but not hurt.



The taser is introduced at TL7 as a standard sidearm for planetary police, security forces, and starport authorities. It is also widely used by bounty hunters, pirates, and private individuals. Especially favored on worlds where the law level prohibits the carrying of more lethal weapons, the taser is only forbidden on worlds with a law level of 7 or greater. At tech levels higher than 7, it becomes an alternative to the snub pistol as a standard shipboard security weapon.

A loaded taser weighs 1200 grams. It is cumbersome and heavy due to the cartridge containing the dart and cable, which weighs 700 grams. The weapon has a length of 250 mm. A special holster is required if the weapon is to be kept with an attached cartridge while not in use. The taser itself costs Cr400, and cartridges cost Cr40. A cartridge will last indefinitely if the dart and cable are retracted immediately after use. The removable battery holds enough power for 20 shots. It can be recharged at any convenient power source (such as a ship's power plant) in one hour or commercially for Cr30.

Pistol skill is a positive DM for use of the taser. However, in a zero-G situation, Zero-G Weapon skill may be used instead.

In **MegaTraveller** combat, the taser has a medium signature, a Low/R recoil, and difficulty as a handgun. Ω



TRAVELLER NEWS SERVICE

TEPHANY/LISHUN (2719 A619DF-A)

Date: 003-1119

¶The Vargr Gtweng has proclaimed himself emperor of Tephany after a bloody coup which decimated the military government of the planet. An armed contingent of loyal guardsmen, distinguished by their black capes and robes, penetrated every section of the capital city by night, making select assassinations and takeovers of communications/media centers. With the smoke of the street battles still in the air, Gtweng announced his intention to reunite this world and three other nearby systems into a self-sufficient enclave. Gtweng cited as his reasons for the coup the lack of coordination of Vargr activities in the sector, the unreliability of commerce in the region, and the threat of independent raiders both on the frontiers and around Tephany itself.

DURIMA/CORRIDOR (1205 B420ADE-F)

Date: 010-1119

¶Forces of the archduke of Deneb and the Reestablished Vilani Empire have come to blows around Depot. Following joint exercises against Vargr fleets in the region, ships from either side exchanged shots during salvage operations. Which side delivered the first salvoes is not clear, but it is certain that further cooperation against the Vargr in this sector is unlikely, a fact that will no doubt hurt the Vilani-settled worlds there.

STROUDEN/SPINWARD MARCHES (2327 A745988-D)

Date: 012-1119

¶The impressive entourage of ships accompanying Lakht Aorlakht, spiritual and military leader of the Aslan invasions, was received today in orbit around Station Five. He and his personal retinue disembarked at the station and took shuttle passage to the surface.

¶Lakht Aorlakht arrived on Strouden in preparation for the summit meeting arranged between Archduke Norris and the Aslan; immediately prior to the summit, expectations were running high that progress would be made.

¶In the evening, Lakht Aorlakht met privately with Fleet Admiral Tranathiaf, personal envoy of the archduke, charged with containing Aslan expansion through negotiation.

¶Their meeting lasted more than three hours, and was later described as heated. The three-day summit was cut short when Lakht Aorlakht stormed from the chambers and immediately shuttled back his squadron.

¶The admiral's office has no expectations of a future summit meeting anytime soon.

BENANKAS/HINTERWORLDS (2524 A7A3353-C)

Date: 100-1119

¶In an official statement issued today by this independent Hinterworlds system, the Benankeen harshly denounced their Gniivi neighbors for support of piratical activities.

¶Without being specific, the statement claims that Benankeen investigators have pinpointed Gniivi involvement in the theft of two of their vessels carrying valuable trade goods bound for the worlds of the Bruia Diagonal.

¶The Gniivi ambassador expressed his regret and Gniivi innocence, offering the services of his offices to right this wrong and bring the truly guilty to justice.

¶It is expected that the Gniivi ambassador will be recalled over this incident.

ANAXIAS/DELPHI (1724 A446A76-E)

Date: 101-1119

¶With the bulk of her reserve fleets committed to holding off Lucan's advances into her territory, Margaret has mustered sufficient strength to mount an attack against the Solomani invaders to rimward in Old Expanses sector.

¶Concentrating the relatively fresh forces of her 145th, 137th, and 67th fleets, Margaret has penetrated 10 parsecs behind forward Solomani fleets, disrupting their lines of communication and supply, and spread out to cut off their retreat.

¶Additional forces attacking out of Delphi sector are squeezing pockets of Solomani ships out of the area, forcing many to disband into small, even, single-ship squadrons to attempt a breakout to rimward.

TRIN/SPINWARD MARCHES (3235 A894A96-F)

Date: 117-1119

¶A daring raid by subjugated humans has resulted in the destruction of an Aslan cruiser in orbit around Dodds.

¶Three human ships which survived the raid arrived at Trin within the week, reporting immediately to naval authorities.

¶The ships were the *Valaderes* and the *Veiled Dream*, both Type S ships, and the *Steaming Retreat*, a Type-K vessel.

¶The *Veiled Dream* has been unofficially renamed the *Ravager* by her crew since the incident.

¶These three ships and three others which did not survive the mission approached the Aslan Cruiser *Kholstesarl* while in space dock at Dodds.

¶Scoring hits with several laser turrets and at least five missiles, the *Kholstesarl* was wracked by internal explosions which broke the vessel's back, according to the human crews.

¶Intercepted Aslan communications support the claim that the *Kholstesarl* was indeed destroyed.

ANUBIS/HINTERWORLDS (2005 B100ABD-C)

Date: 123-1119

¶The heart of the Anubian Trade Coalition is rumbling with the news of progress on the bargaining tables between it and the representatives of Margaret's realm.

¶The talks, organized by the coalition, were hoped to smooth over the Gimisapun Incident in which three of Margaret's merchant vessels, bound for the Two Thousand Worlds, were stopped, searched, and turned away by an Anubian patrol.

¶The coalition has accepted full responsibility for the wrongs committed and has compensated Margaret for any loss incurred.

¶Future trade with Margaret, both with the Anubian Trade Coalition and through its worlds, will progress at an increased level.

¶When asked whether or not this is a step toward siding with Margaret in the civil war, the ATC had no comment.

Claw-Glove

By Christopher Willoughby

The claw-glove is commonly a Vargr weapon, although other races, humans and, more notably, Aslan, have been known to use it in combat. Developed on many different worlds in varying shapes and sizes, the claw-glove is an excellent example of a weapon which has its origins in the imitation of nature.

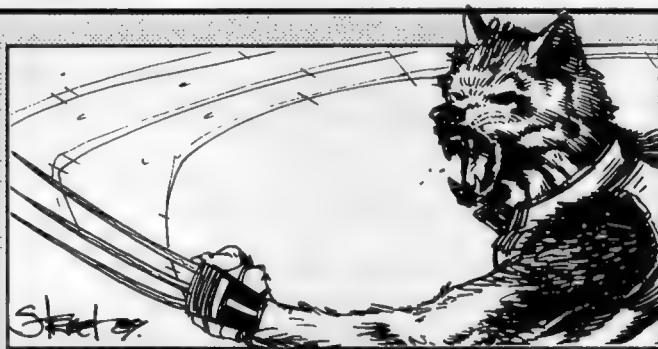
For those who are skilled in its use, the claw-glove makes a superior combat weapon; its three sharp blades are capable of inflicting terrible damage, both slashing and stabbing. The protection it affords to the hand makes it an effective parrying tool. Also, the tines of the weapon are set to give them a firm base, so it can be used to disarm an opponent, or even to break his weapon by catching it between the tines.

Description: In the common or Vargr design of the weapon, three 20-30cm blades are attached to a metal plate, covering the hand (or similar appendage) from the knuckle to the first joint, hinged to another metal plate covering the back of the hand. The plates are attached to a thick glove, which fits snugly over the hand and straps at the wrist.

The hinging of the two metal plates allows the glove hand to be flexed. When the fingers point straight out the claws are perpendicular to the forearm, but when the hand is balled into a fist, the claws point straight out. This arrangement allows the wearer to grip an object without removing the weapon. *TL: 3 Vol: 11 Weight: 1.5 kg Price: Cr100.*

Referee's Notes: Vargr characters earning blade combat skill may elect to take it in claw-glove. All other characters must learn this skill through instruction.

In combat involving claw-glove the following should be used: *Pen: 4 Block: 2 Damage: 3.*



If the player elects to attempt a disarming maneuver using this weapon, he must declare so at the beginning of his attack phase. If this is done, the player may take a DM of +1 on his roll to hit. A hit indicates that the opponent has been disarmed, and his weapon may be treated as scattered. Any result that is two or more above the number needed to hit means that the opponent's weapon has been broken and rendered useless. Any result that is three or more less than the number needed to hit means that the player's claw-glove has been broken. If combat continues, the character's weapon should be treated as a dagger. If the player does not declare that he is attacking to disarm and scores a hit normally, disarming may still be conducted using the procedures outlined in the *MegaTraveller Player's Manual*.

Finally, while Vargr often wear claw-gloves openly, as a human being would wear a blade, this is disdained among the other races. A claw-glove worn by a Vargr should be treated as an ordinary blade weapon with respect to law level. Members of other races who wear this weapon should be treated as if the law level were two levels higher, as it is both uncustomary and unfashionable among other races. Ω

CYRIL/REFT SECTOR (2738 A7A69B9-F)**Date: 125-1119**

¶Major offenses between the forces of Dulinor and Strephon have broken down into widespread, sporadic brawls between the shattered fleets.

¶The attrition suffered in Gushemege sector have been the most terrible so far, totalling thousands of vessels and more than a million casualties to both sides.

¶With his stronger fleets beginning to give ground before Lucan's forces, it is unlikely that Dulinor will commit additional resources to the fight against Strephon; the fleets already there will be charged with holding off the imposter until the entire tide of the conflict shifts back into his advantage.

GERDANE/HINTERWORLDS (0407 C000110-7)**Date: 133-1119**

¶Three asteroid mining vessels under the flag of Ral Ranta reportedly tangled with an independent Solomani destroyer in the Gerdane system.

¶The three ships, hopelessly outgunned, offered only token resistance as they evaded the Solomani vessel through the asteroid field, jumping finally to the safety of the Sablass system two parsecs distant.

¶Reviewing sensor data, representatives of Ral Ranta's armed forces have confirmed that the enemy ship was indeed of Solomani origin.

¶Speculation is that Margaret's thrusts into Old Expanses sector are forcing Solomani vessels to break out in whatever direction they can.

KAGGUSHUS/MASSILA (0402 A442AA7-G)**Date: 137-1119**

¶Obviously committing the last of his reserve fleets, Dulinor has pushed out of Zarushagar sector through Massila, temporarily cutting the Imperium in half.

¶Elements of Dulinor's 9th, 41st, and 278th fleets, among others, have cut a swath of systems 30 parsecs long and five parsecs deep, virtually bridging the gap between Dulinor's worlds and those of Margaret.

¶The admiralty issued a statement calling the attack a "desperate attempt to open a new front, diverting our resources from our drive toward Dian."

¶The statement also announced that the incursion would be routed out within a few months, but until that time the area is to be considered too dangerous for travel.

VENAD/HINTERWORLDS (0402 A221621-B)**Date: 139/1119**

¶Margaret's admiralty today confirmed suspicions that her offensive into Old Expanses sector has been very successful to date, and that Solomani fleets there are beginning to disperse in front of her advancing squadrons.

¶The admiralty also announced that their intelligence confirms that many Solomani vessels, independently and in small squadrons, are breaking out through the Hinterworlds sector.

¶Margaret is making a sector-wide appeal for assistance against the aggressor Solomani; bounties ranging from hundreds of credits to grants of nobility are being offered for information about or confirmed destruction of fleeing Solomani vessels.

¶Venad's starport will be the official processing center for all claims concerning Solomani activities within the Hinterworlds sector.

ARKON/HINTERWORLDS (1315 C56999B-A)**Date: 140-1119**

¶The ruling council proudly opened its new orbital refueling and rest station, hoping to better serve its nonstreamlined patron vessels.

¶The facility, complete with refueling and maintenance stations, also boasts large shopping, hotel, and recreational areas, all gravity enhanced and of low cost.

¶Though only loosely organized, the corporations and facilities of Arkon are always trying to improve the image of their system, which has been one of outlandish prices and inconvenience.

ROBIN/SPINWARD MARCHES (2637 C00059C-C)**Date: 143-1119**

¶Today a squadron of *ihatei* vessels descended upon and destroyed multiple human-operated bases within the extensive asteroid belts of Robin.

¶The brutality of the raid left no facilities or ships intact, and all personnel were reportedly killed or taken prisoner.

¶Though technically already within the Aslan sphere of influence in the sector, human belt mining operations had been conducted without Aslan interference for more than a year. Ω

Challenge 38 Feedback

Umpiring Twilight	3.65
Military Electronics in Twilight	3.65
Equipment List	3.56
A Journey to Oblivion	3.34
Grapnel Gun	3.95
Prize Court	3.89
Boarding Party	3.85
Monitor-Class Scout	3.92
Courier	3.89
Star Cruiser Power	3.90
Beta Antarae Sector	3.52
Direct Fire Artillery	3.34
A Place in the Sun	3.28
Starfighters Down	3.65
Ships of the Pursuit Wing	3.34
From the Management	3.28

MEGATRAVELLER™

Just Detected	3.29
Traveller News Service	4.01
Reviews	3.86
Challenge Classifieds	3.44
Issue 38 Cover Art	3.90
Issue 38 as a Whole	3.95

We look forward to hearing your opinions on **Challenge** issue 40. Ω

Match

By Christopher Willoughby

Originally developed as a cutting tool by research engineers at Ling Standard Metals, the tiny, convenient match has seen a variety of uses, most notably (unfortunately) as a burglar's implement. Its size makes it quite handy, as it is portable enough to carry in a pocket, yet powerful enough to burn a hole in the hardest metals. To achieve this effect, it utilizes a pinhead-sized superconductor filament, connected to a ceramic focusing element.

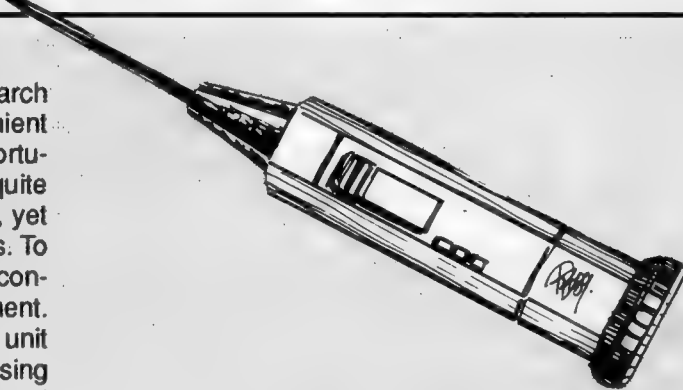
Briefly, electrical current from the batteries in the unit causes a thermal build-up in the focusing element, using comparatively little energy to create a microfine point of intense heat. This device is extremely energy efficient.

Description: A match is slightly larger than a standard screwdriver, and of roughly the same shape. It has a blunt, thick handle and a protruding point. When its blunt end is twisted clockwise, its point glows white-hot and is capable of cutting through most materials. The user's hand is protected from the heat by an insulating coating on the device, although a glove should be worn to keep the user from being scorched by whatever material he is cutting. It is capable of 30 seconds total cumulative use before its filament burns out.

Filaments are disposable and are sold in packs of five spikes for Cr300. The handle, which houses the batteries, must be recharged after 30 seconds of use. The unit price listed below includes the recharger. *TL: 15 Vol: 11 Weight: 2 kg Price: Cr2000.*

Referee's Notes: For purposes of structural damage, a match does three Penetration points of damage per second of application. However, as many players will not be using it to cut man-sized holes, the following guidelines should apply.

- To burn the hinges off of a hatch will take 20 seconds.
- To burn a hole 5 cm in radius in an iris doorway will take 15 seconds.



- To burn a hole 5 cm in radius in an ordinary doorway will take eight seconds.

Any other situations should be handled according to the referee's discretion, using these examples as a basis for judgement.

Since the focusing element of a match is very sensitive to pressure, this device makes a poor combat weapon. If used in this manner, treat it as a dagger with a Penetration of 7 on the first hit only. Thereafter, the filament will be broken and totally useless.

Anyone foolish enough to grip the point of a match while it is on must roll his Endurance or less on 2D to avoid going immediately unconscious. He must then roll his Dexterity or less on 2D to avoid permanent loss of ability in that appendage, causing a 1D loss in Dexterity. If the player does not lose the use of that appendage permanently, the referee must then roll 2D for the number of days that the appendage will be incapacitated, resulting in a temporary Dexterity loss of 1D. Placing a lit match in the palm of the hand is considered one of the worst forms of torture.

Final Note: Because it is often used as a burglar's tool, a match cannot usually be obtained on high law level worlds. Black market prices should be triple or quadruple the standard price. Ω

Riding the Wave: New Equipment for Cyberpunk Adventures

2300AD

Lester W. Smith

One of the most important themes of the cyberpunk genre is the rapid pace at which technology changes. Characters in cyberpunk stories are continually encountering new developments in equipment. Often such items are held by the opposing side in a conflict, and the protagonists are forced to match their outmoded equipment against them. At other times, a character will stumble across a prototype of some new item or program and be able to use it for himself, until it, in turn, becomes outmoded by even newer developments.

In running cyberpunk adventures, it is important for the referee to imitate this technological change by continually confronting his PCs with new equipment. It is with that in mind that the programs and devices described in this article are offered. Each item listed here is given a basic description, followed by specific rules and statistics for using it in **2300 AD** (with the **Earth/Cybertech** sourcebook) and in R. Talsorian's *Cyberpunk* role-playing game.

PROGRAMS

The four programs described here are all fairly powerful, and the referee may wish to reveal them one at a time over a course of several adventures. The first two are simply differing methods of attacking the power supply of a computer system, such as a corporate mainframe. The second two deal with the concept of artificial intelligence, typically abbreviated as AI in science-fiction literature.

Artificial intelligence is a common concept in the cyberpunk genre, as could only be expected once the idea of a direct mind-to-computer interface has been established. The AI programs described below are both based upon self-replicating mathematical models that can incorporate input into their matrices and adapt themselves to it. In effect, these programs can "learn" how best to tackle a problem to which they are assigned.

The problems with such programs are threefold. First, they are of such complexity that they are extremely expensive. Not only is a lot of time and expertise required to create the programs in the first place, the fact that they are somewhat rare serves to inflate the prices they command. Second, AI programs typically require a lot of memory to store. For cyberjockeys, this translates into less space remaining in a cyberdeck for other programs that might be needed on a run. Finally, the mathematical models upon which these AI programs are based are prone to crashing unexpectedly. A healthy program "pulses" in seemingly random patterns, indicating its openness to further input. An unhealthy program crashes in one of two ways: It either enters a "lapsing" pattern in which it fades to nothing, or it enters a "loop" from which no exit is possible (although any files stored in a "looping" program can be read and copied).

The final program described here provides the possibility of living personalities being recorded in computer programs. Again, this is a fairly common topic in the cyberpunk genre, but a cyberpunk referee will want to carefully consider the implications in his own campaign.

Surge

Surge is a one-use program designed to destroy the con-

tents of computer systems. The user of such a program must first work his way to the core of the target system, then access the system's power supply and initiate the Surge program. Once this has been accomplished, the Surge program draws a heavy load of power and blasts it throughout the system, destroying itself, along with any programs and files that it encounters. Do not use Surge if you plan to loot the system afterward; chances are there may be nothing left to loot.

2300 AD: Once the mainframe portion of the target system is accessed, the cyber jockey using Surge initiates the program and sets it to delay firing for any desired number of turns and initiative points. For example, a Surge program might be activated at initiative point 6 of one turn and be set to fire three turns later at initiative point 2. The delay feature of the Surge program is intended to allow the cyber jockey time to exit the system before the blast.

Surge programs are available in different levels of effectiveness. For each level that a particular program is rated, it will release 100 Offensive points from the target system's energy source. These points flash through the system like a flood of water through the corridors of a building. Where they reach a branching of paths, they will divide as evenly as possible and follow all available routes. For example, if a 300-point Surge encountered a four-way branching, it would release 75 points into each of the possible routes.

Whenever the Offensive points from a Surge program encounter a program or file, they automatically do damage to that target's Volume. Offensive points used in such an attack are used up. To demonstrate, if 75 points of a Surge encountered a program with 50 points of Volume, the 50-point program would be destroyed, and 25 points of Surge would continue onward. If the remaining 25 points of Surge were then to encounter a file with a Volume of 60, the 25 points of Surge would be used up, and only 35 points of the file would remain. (If Offensive points from a Surge program encounter a cyberdeck, they first do damage to its Defense, of course).

Surge programs require 10 points of storage Volume in a cyberdeck for each level of effectiveness. *Price:* Lv450 per level.

Cyberpunk: To use a Surge program, a cyber jockey must work his way to the target system's central processor. Once there, he can initiate the program and set it to fire any number of phases later, in order to allow him time to exit the system. When the program fires, it flashes throughout the computer system, attacking everything it encounters with its Strength rating. For this purpose, information files are considered to have a Strength of 1 to 3 (referee's option, depending upon the importance of the file). The Surge program can only attack once each program or file it encounters. Surge programs are available in levels I to VII, with Strength being equal to level number. The cost of the Surge program is \$250 p/lvl.

Appearance: As follows.

- **Dungeon Interface:** A pulsing ball of pale green light, which suddenly explodes.
- **Tronnic Interface:** A spinning, multifaceted crystalline sphere that bursts apart into scintillating sparks.
- **Mega City Interface:** A steam boiler leaking from the seams, with the pressure gauge pegged in the red.

2300AD

Leech

Like Surge, Leech is a program that attacks a computer system by way of its power supply. But whereas Surge causes that power supply to spike through the system, destroying most everything in its path, Leech merely blocks off the power supply to the computer system, draining strength away from the system's protective programs.

2300 AD: After reaching the mainframe of a target computer system, a cyber jockey identifies the system's power source and activates his Leech program. The effect of the Leech is to weaken the cyberspace combat abilities of all opponents who draw power from the system. In game terms, this means that task rolls to evade or attack such opponents are one level lower (Difficult becomes Routine, etc.), and task rolls they make to evade or attack you are made at one difficulty level higher (Difficult becomes Impossible, etc.). Leech takes up to 25 points of Volume. *Price:* Lv3500.

Cyberpunk: To use a Leech, the cyber jockey makes his way to central processor, identifies its power source, and initiates the program. While the Leech is in operation, all programs powered by the system (including those of on-staff Netrunners) have their Strength rating reduced by two points. If this reduces a program's Strength to 0 or -1, that program crashes. Leech programs cost \$2500.

Appearance: As follows.

- **Dungeon Interface:** A creeping vine fastened to the trunk of an immense tree, working its roots deeper into the wood.
- **Tronnic Interface:** A long, thin, silvery worm, wrapped around a humanoid body, with its oral sphincter fastened to the neck.
- **Mega City Interface:** A thug in a double-breasted suit, stealing handfuls of bills from the drawer of the cash register.

Idiot Savant

Idiot Savants are limited AI programs specially designed to make use of AI's adaptive characteristics. An Idiot Savant will completely change its configuration to best attack any problem to which it is set. This means that one Idiot Savant program can adapt itself to perform the functions of several different specialized programs. At one point, an Idiot Savant might be used as an infiltration program, then later become a pure attack program, and finally become a stealth program.

But as has been mentioned before, AI programs based upon self-replicating mathematical models are prone to a crash. In game terms, this tendency is simulated by making a 1D10 roll at the end of any run in which an Idiot Savant is used, to determine if the program crashes. If the number rolled is less than the program level, the program falls into a lapse pattern and dies; if the number rolled is exactly equal to the

program level, the program enters a loop pattern and locks up; and if the number rolled is greater than the program level, the program pulses and can be used again.

2300 AD: The strength of Idiot Savant programs is rated in levels from 1 to 5. Each level requires 7 points of Volume for storage. A program's level can be added to any one of a cyberdeck's basic stats: Speed, Accuracy, Offense, Defense, or Volume. It takes one action to change an Idiot Savant program from one configuration to another.

Note that if the program is used to add to Volume, considerably less Volume is gained than was taken up by the program originally, but this can still be a handy place to store those few extra points of a file that would otherwise be too long for open Volume. Also note that if a program configured as Volume loops after the run, the information stored in it can still be read and copied to empty Volume. *Price:* Lv500.

Cyberpunk: An Idiot Savant can be of level I to V and can mimic any of the following programs: Data Wall, Code Wall, Hammer, CodeCracker, Invisibilty, Speedtrap, and Killer. It takes one phase for an Idiot Savant to be reconfigured to any one of these programs.

The level of the Idiot Savant program is its Strength as any of these programs. Because of the complexity of Idiot Savant programs, each level of such a program takes up one of the five slots available in the cybermodem. For example, a cybermodem loaded with a level III Idiot Savant would only be able to carry two other programs. Idiot Savant programs cannot be loaded into Demon programs.

Cost for an Idiot Savant program is \$400 p/lvl.

Appearance: As follows.

- **Dungeon Interface:** A wizard who changes shape to match whatever program the Idiot Savant is mimicking.
- **Tronnic Interface:** A chromed humanoid with no discernable facial features.
- **Mega City Interface:** A short fellow in a cloak and top hat, with a disguise kit under one arm, from which he pulls masks that match the program the Idiot Savant is emulating.

Cold Storage

In the middle decades of the 20th century, a few people attempted to cheat death by having their bodies frozen before all signs of life were extinct. It was their hope that in future ages, when medical science had improved, they could be thawed and brought back to life. With the development of direct brain-to-computer interface, a new method of cold storage has been developed, the recording of brain activity in a computer program. People who have such recordings made hope that one day medical science will be able to grow clones of their original bodies and graft their recorded personalities into those clones.

Because of the incredible number of connections in the human brain, only very sophisticated AI programs are complex enough to record brain activity. But as explained previously, AI programs are very prone to crash. In the case of the Cold Storage program, there is a chance that the program will crash at any time it is used, including just after the initial recording procedure as well as the (as yet hypothetical) grafting procedure. For this reason multiple recordings are usually made, in the hope that at least one will remain

viable throughout the entire process. It is possible for such a recording to be accessed by cybermodem, allowing a cyber jockey to communicate with the recorded personality, for instance, but this use also runs the risk that the program may crash immediately afterward.

A referee can use Cold Storage programs in his cyberpunk campaign in a number of different ways. First, a personality recorded on such a program might have information that the player characters need, and the recording could therefore become the object of an adventure in the cybernet. Alternatively, the PCs might come across one or more unused programs and record their own personalities on them, in hope of ensuring their survival in cyberspace, even if their bodies die during a later adventure.

The PCs might find these programs during a cyberspace run, or they might take physical possession of a computer that contains the programs. It is even possible that the PCs might run up against a plot to attempt to transfer the recorded personality of some ruthless person onto the brain of a drugged or comatose victim.

2000 AD: Cold Storage should be *extremely* rare in any **2300 AD** campaign, and its existence should be considered a secret carefully protected by Earth's very wealthiest members. The chances of the PCs stumbling on such a program in cyberspace should be very unlikely; recorded personalities are stored in the most carefully guarded of systems. The chances of the PCs purchasing such a program should likewise be extremely rare, as is reflected in the price listed below.

Whenever a Cold Storage program is used in any manner, a check should be made to see if it crashes immediately afterward. The target number to be used for this check is 8. As with the Idiot Savant program, above, a roll below the target number means the program lapses, a roll of exactly the target number means the program loops (and another recording could be made from this one), and a roll above the target number means that the program pulses and remains viable.

The Cold Storage program requires a Volume of 80. Note that while such a program could be recorded in pieces (such as in three Second String programs), it can only be run (to copy a personality, graft that personality to a living brain, or allow that personality to be communicated with) in a system that can contain it as a whole. *Price:* Lv10,000,000 or more.

Cyberpunk: The sample adventure in R. Talsorian's *Cyberpunk* role-playing game mentions an optional "black program" known as Soullkiller, which erases the personality from the victim's brain and stores it in a huge database. The Cold Storage program could serve as that database. In such a case, the Strength and cost of such a program are considered to be separate from those of the Soullkiller. The Strength of Cold Storage is 8, as described above, and its cost is \$2,500,000.

Appearance: As follows.

- **Dungeon Interface:** A stone bier with rounded glass top, containing a sleeping human figure.
- **Tronnic Interface:** A steel, coffin-shaped machine with a glass panel, in which a humanoid figure can be seen.
- **Mega City Interface:** An iron lung machine with the head of an unconscious human projecting out of the end.

OTHER EQUIPMENT

The equipment described here includes items that player characters might purchase and use, as well as items that they will likely only encounter on the opposing side. Most of these items are relatively rare. Not everyone on the street would be in possession of a balloon cam, for example. For this reason, when the referee first introduces these items into his cyberpunk campaign, he should try to make them something of a surprise.

2300AD

Cellular Launcher

By Carl A. Bergman

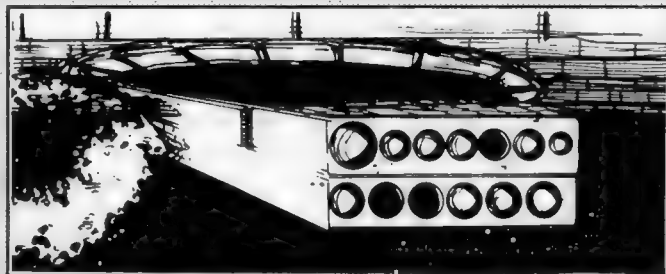
The cellular launcher is a new storage/launching system for missiles. It is a collection of individual missile holding cells, each equipped with its own exit port. The cells within each launcher are designed to hold a certain size missile. A cell can hold missiles smaller than those for which it was intended, but not larger.

Each cell contains the missile it is storing, monitoring equipment for the missile, an exit port for the missile, a pre-launch telemetry package to prepare the missile for launch, and a hydraulic launch device which forces the missile out of the cell at the time of launch. Once the missile is forced from the tube, the missile's own stutterwarp drive takes over.

The amount of volume and surface area that a cellular launcher uses can be figured by multiplying the diameter of the missile by 1.2, then squaring the result. This value is the surface area used by a single cell in the launcher. Add one to the length (in meters) of the missile, and multiply that by the surface area to determine volume used. For determining the volume and surface area of the entire launcher, multiply the values for a single cell by the total number of cells.

For example, in a cellular launcher for 16 SIM-14 missiles, the diameter of a SIM-14 missile is one meter. Multiplying one by 1.2 gives 1.2. Squaring this result gives 1.44 square meters of surface area. As the SIM-14 is seven meters long, adding one to its length gives eight. Multiplying eight by 1.44 gives 11.52 cubic meters of volume. Multiplying the surface area of 1.44 by the 16 cells in the launcher gives a total surface area requirement of 23.04 square meters. Multiplying the volume of 11.52 by 16 gives a total volume requirement of 184.32 cubic meters.

A cellular launcher requires more surface area than a standard missile bay (23.04 square meters as opposed to two square meters). However, the internal volume used is less (184.32 cubic meters as opposed to 224 cubic meters). The primary advantage of a cellular launcher, however, is in its rate of fire, which, as each cell has its own custom exit port, is limited only by the number of missiles carried and the number of remote pilot work stations the ship has. If the ship in which the above launcher is mounted had 16 remote pilot stations, then all 16 missiles could be launched in the same turn, assuming that



none of the remote stations were doing anything else at the time.

In the event that a ship equipped with a cellular launcher should receive a weapons hit, each launcher, not each cell, on the ship counts as one weapon when determining what is hit. If a cellular launcher is hit, a cluster of four cells, determined randomly, is knocked out of action. The remainder of the launcher is still capable of firing, assuming that any unfired missiles remain in undamaged launchers.

When repairing a cellular launcher, the player must state which four cell blocks the damage control party is attempting to repair. If every cell in the launcher is damaged, then the launcher is considered destroyed. For each cell which is damaged, there is a 50-percent chance that the missile in that cell, if not already launched, is also damaged, making the missile useless.

Reloading a cell of a cell launcher can only be accomplished in an All Stop state. The time requirements and crew requirements are the same as for launching a missile from a cargo hold (see section 9 of the *Star Cruiser Naval Architect's Manual*). This reloading is done from the outside of a ship and assumes that the missile in question is already in place to be loaded. It takes two turns for the same number of crew to remove a missile from a cargo bay and position it for reloading. An automatic loader can be installed for a launcher, with volume and surface area requirements equal to that of four cells from that launcher. The cost of the loader is Mlv0.1. With an auto loader, the crew requirements are cut to one, and the loader can remove the missiles from the ship's cargo bay or from the cargo bay of another nearby ship which is also at All Stop to install it in the launcher cell. To remove an unused missile from a cell requires an amount of time and manpower equal to that of loading a missile into a cell. Ω

Balloon Cam

A balloon cam consists of a small video camera mounted on a tiny blimp (approximately 50 cm in length and 20 cm in diameter), with a miniature computer programmed to control the blimp's movement. Typically, a balloon cam is programmed to maintain a particular position in relation to some moving object, such as a person. As the person moves, the blimp moves with him, and the camera records whatever the person encounters.

The uses for such a camera are many. Besides their attractiveness for making personal video tapes, balloon cams can be fitted with transmitters to allow constant surveillance of individuals, such as parolees, or to provide moment-by-moment reports from roving newsmen, police, and military teams. With the addition of flexible plastic video screens mounted on the blimps' sides, balloon cams have also become popular among members of the entertainment industries, to whom image is exceedingly important. A pair of balloon cams hovering over a person's shoulders, vid screens glowing with images of his face (suitably enhanced by the camera's computers), can add a lot of glamor to that person's presence.

2300 AD: Besides the normal advantages of having an imager at hand to record events, in certain circumstances, the referee might wish to add a bonus to the Eloquence (because of the emotional impact) or Renown ("He must be famous; look at all those cameras.") of a character who is accompanied by one or more balloon cams with vid screens. Of course, in other situations, balloon cams may draw unwelcome attention.

Weight: 4 kg.

Signature: 0.

Maximum Speed: 50 kph.

Cruise Speed: 10 kph.

Combat Movement: 100 m.

Endurance: 30 hr.

Price: Lv750.

Cyberpunk: Balloon cams are especially popular among Medias and Rockerboys. A balloon cam can allow a Media to record events while keeping his hands free for other tasks, such as holding weapons. Balloon cams with vid screens can add to the Attractiveness of Rockerboys, giving them a bonus at task attempts involving this statistic. Other character types can use balloon cams in the same ways, if the referee agrees. The cost for a basic balloon cam is \$1300, or \$1800 for a balloon cam with a projecting screen.

Hologram Recorder/Projector

Another item that is very popular among entertainers is the hologram recorder and projector. With this item, a larger-than-life replica of a performer can be projected on stage, aiding greatly in conveying the performer's facial expressions to a large audience, for example. Smaller replicas can be of use to enhance a person's impact in more intimate settings, much as images are used on the vid screens of balloon cams.

Because of their weight (typically about 60 kg) and their energy requirements, hologram recorder/projectors are not very portable, and their projection range is usually under 10 meters. This limits their usefulness to static locations. As

well, holograms do not convey the sense of solidity that a real object would, and they are especially faint in strong light. Despite these facts, however, there have been instances of police assault teams carrying hologram projectors to sites where gunmen have holed up and using holograms to draw the criminals' fire temporarily.

2300 AD: As with balloon cams, in the right circumstances, hologram recorder/projectors can add to a character's Eloquence statistic. Creative players may be able to think of other uses for holograms as well.

Weight: 60 kg.

Endurance: One hour on self-contained batteries.

Price: Lv1300.

Cyberpunk: Holograms from this piece of equipment can add to the impact of a character's presence, giving a bonus to Task Attempts involving the use of Attractiveness. Other possible effects are left to the discretion of the referee. Hologram recorder/projectors cost \$1500.

Mimicker

The mimicker is a rather rare bionic enhancement that enables its user to reproduce the voices of other people. This piece of equipment is grafted directly onto the larynx, where it stimulates the necessary tension in the user's vocal chords. Because the larynx is very close to the surface of the throat, the mimicker apparatus is obvious to any close inspection.

Each mimicker can record and store up to six different voices, and a character can have as many as three mimickers installed. With a minimum amount of training, a user can learn the nerve impulses necessary to stimulate the mimicker to play a voice from memory or to record a new voice. Mimickers come with a sample selection of famous voices already installed.

The normal muscle movements of the throat provide the power necessary for mimicker operation.

A mimicker cannot fool a voice-analyzing machine, and some voices are virtually impossible for some larynxes to produce. (For example, a very petite woman would be unable to produce a very bass voice).

2300 AD: Mimickers are considered to be legal bionics, and they have begun to show some popularity among actors and singers. However, legislation is in process in a few nations that may require mimickers to be registered with the national government. A character with a mimicker installed should gain a bonus of one to task rolls involving attempts to disguise himself as a known figure, and a bonus of three when simply trying to disguise his own identity.

Weight: Insignificant.

Endurance: Unlimited.

Price: Lv850.

Cyberpunk: A mimicker adds a bonus of two to Task Attempts involving the Disguise skill when attempting to impersonate someone else and a bonus of four when simply trying to disguise his own identity. The cost for a mimicker is \$800.

Biocaster

The Biocaster is a tiny cybernetic unit designed to be grafted into the brain of any animal massing at least 2 kg, for the purpose of broadcasting that creature's visual and aural

activity. The unit was originally designed to produce nature films from an animal's perspective, but it has since found some use in reconnaissance work. A person tuned into a particular biocaster unit is merely a spectator; he has no control over the host animal's actions. But some creatures, such as dogs and dolphins, can be trained to follow preestablished patterns of travel, making them excellent perimeter guards, for example.

Biocaster units have a broadcast range of approximately 300 meters. They are battery powered and require a fresh battery approximately every 1000 hours.

2300 AD: Biocaster units are one form of bionic equipment that is often used by government agencies.

Weight: Insignificant.

Endurance: 1000 hours.

Price: Lv2500 (plus price of animal), Lv350 for insertion of new battery.

Cyberpunk: If you can keep an animal alive on the streets of the city, you might find a biocaster unit to be of some use. A biocaster unit costs \$900 (plus the cost of the animal), with an additional charge of \$150 for battery replacements.

Slaver

Slaver is another cybernetic implant intended for use in animals. It draws its name not from the fact that it enslaves the animal, but from the drooling that accompanies its use. Slaver stimulates the rage center of the animal's brain, causing behavior similar to that of an animal infected with

rabies. The behavior remains in effect for the duration of the time the implant is keyed on (by radio control) and disappears when the implant is turned off.

A common use of this implant is in guard dogs that already have biocaster units implanted.

Such an animal can be stimulated to berserk fury upon the command of a remote operator who is monitoring its patrol by means of a biocaster.

Because of the very small amount of power used by this device, it is able to operate indefinitely from electrochemical processes in the host animal's brain.

2300 AD: In most countries on Earth, laws prohibit the use of slaver. For this reason, it is typically only available from black clinics.

Weight: Insignificant.

Endurance: Indefinite.

Price: Lv8000 (plus price of animal).

Cyberpunk: A slaver unit costs \$3500, plus the cost of the animal. Ω

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GRAND ALLIANCE



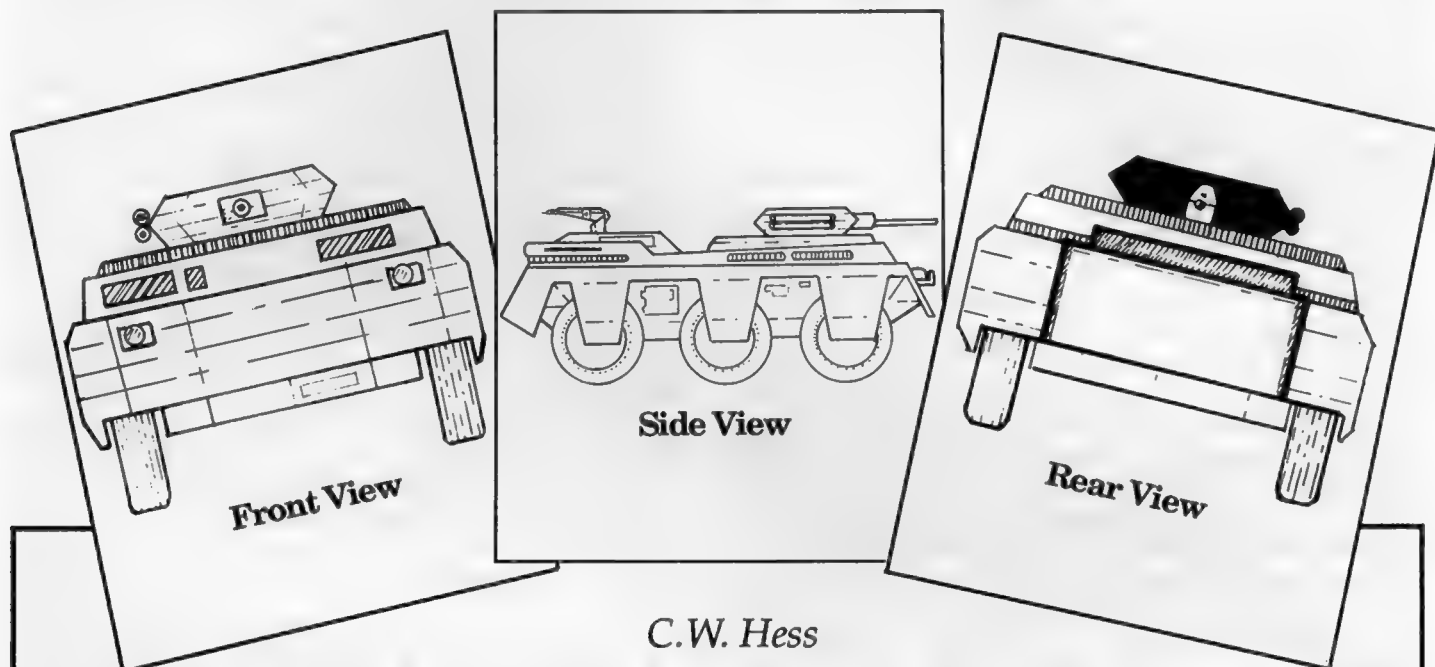
"Grand Alliance" is a fully computer moderated play-by-mail game which involves the battle of survival between human and alien races. Players represent either a member of the human race or of the alien race with the universe as a setting. The game is played on a map of three parallel levels where each level is composed of 240 planetary systems. Each player must solve military and political problems within their own camp before war can be waged effectively against the opposing race. Each side is faced with the same situations and problems to overcome.

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With a top speed of 140 kph and a cruising speed of 100 kph, the M17A1 is designed to carry its troops to the battlefield, then support the dismounted troops with its own armament.



M17A1 Armored Personnel Carrier

The M17A1 is a wheeled, armored personnel carrier designed and manufactured for the U.S. Marine Corps, and first introduced in 2271. The M17A1 is powered by a pair of A.T.I. model-D01 hydrogen fuel cells, providing the vehicle with a top speed of 140 kph and a cruising speed of 100 kph. The twin power plant design gives the M17 good battlefield survivability as the vehicle can still run with only one power plant operational. In such a case, the vehicle's top speed drops to 70 kph and cruising speed to 50 kph. Being a wheeled vehicle, the M17 doesn't have quite the terrain-crossing capability as a tracked or hover vehicle, but it is completely amphibious. On the water, the vehicle can travel at up to 20 knots.

The M17 can carry a maximum of 12 passengers plus 250 kg of equipment

in addition to its three-man crew (consisting of a driver, gunner, and commander). A large access door allows quick entry and exit during combat. This door is actually a bottom-hinged ramp with a door mounted in it and is located at the back of the APC. To better protect troops, the rear ramp is recessed approximately half a meter, allowing the armored walls of the vehicle to stick out and cover the mounting or dismounting troops.

Designed only to carry its troops to the battlefield, then support the dismounted troops with its own armament, the M17 has no firing ports, but it does have four troop hatches which the passengers may fire from. Its support weapons consist of a 30mm autocannon and a 30mm automatic grenade launcher, both mounted in a remote turret atop the forward end of the vehicle. A 100-round

drum magazine feeds the autocannon, while the grenade launcher has two 25-round magazines: one with smoke and the other with HEAP rounds. The gunner can switch back and forth between the grenade magazines at any time. The M17A1's primary antivehicle weapon is the Javelin missile. A pair of these lightweight missiles, commonly carried by marine rifle teams, is mounted on the right side of the main remote turret, protected from small arms fire by an armor sheath.

The turret-mounted weapons may fire at the same time, but only if they are both firing at the same target. Also, because of the mounting of a turret at the rear of the vehicle, the main turret is incapable of firing on targets in the rear 30-degree arc. It can traverse through this area, as the gun automatically elevates to clear the obstruction.

Mounted inside the rear turret is a limited-arc 30mm grenade launcher. This unit, unlike the forward-mounted grenade launcher, is fed from a single, 25-round magazine, which is easily changed by the passengers or crew. Most vehicles carry a total of at least two spare magazines during combat operations, usually containing high-explosive or concealment rounds. The turret design itself limits the operation of this second grenade launcher to the rear 180-degree arc of the vehicle.

Since the development of the M24 hover APC, the marine corps has been decreasing its reliance on the wheeled M17. Presently, only about one-third of all marine APC battalions are still equipped with the older wheeled vehicle. The remaining battalions are mostly equipped with the newer hovercraft. Even so, the M17 is likely to remain in service for some time yet considering its own design advantages.

Being a wheeled vehicle, the M17 cannot cross terrain as quickly as most hovercraft, and cannot cross some obstacles at all, but the M17 has a greater acceleration rate and better maneuverability than the M24. More important, since the wheeled APC does not rely on air to operate, it can be used in a vacuum, whereas the M24 cannot. For this last purpose, the M17 was designed airtight, so that its occupants do not have to completely rely on their space suits' life-support systems. In fact, the vehicle's life-support units can keep up to 12 people comfortable for 12 hours with a 24-hour emergency reserve. During major operations, this is normally supplemented by packages mounted on the sides of the vehicle, providing an additional 24 hours of normal life support. The M17 does not have an air lock and must depressurize in order to open any door or hatch. During combat conditions, though, the interior is normally depressurized anyway, with each person's space suit plugged into the vehicle's life support.

Of the M17A1s still in service with the U.S. Marine Corps, most are assigned to the 3rd and 5th marine divisions. Several variants of the M17 are also found throughout the corps. The APC is currently in service with the U.S. Army, as well as the armies of Australia, Nigeria, and Texas, with some variants also

sold to Canada. Most of the M17s that were replaced by the newer M24s were sold to the civilian sector as the unarmed variant described below.

VARIANTS

Variants of the M17A1 wheeled APC include the M643 light armored recovery vehicle, the M701 mortar carrier, and the M171 armored command post vehicle. Many of these are still operational but mostly with divisions equipped with M17 APCs. Other divisions still have some of these variants, but most are finally replacing them with the M24s.

The M17A3 is the most common variant used today. This vehicle is an armored cavalry version which carries a set of enhanced communications and detection gear, and additional ammunition for all its weapon systems. These additions come with the reduction of the passenger-carrying capacity to three, plus the three-man crew. The variant vehicle is constructed with a pair of firing ports, one on each side near the rear of the vehicle. Also, the M17A3 carries a second pair of Javelin antivehicle missiles mounted on the left side of the turret in a mounting identical to the one on the right side.

The M17 can be found outside of military use in an unarmed version which normally comes with much of the outer layer of armor plating removed. This version is marketed as the Thunder, a rugged all-terrain vehicle. It is commonly found in use by various colony militia as a standard armored carrier, with various armored car services, planetary survey companies, and so on.

M17A1

Type: Wheeled APC
Crew: Driver, gunner, commander
Weight: 2800 kg
Armor: As follows
Suspension: 0.3
Front and Overhead: 6
All Other Faces: 4

Armament: One DH30 30mm autocannon in remote turret; one 30mm AGL mounted next to autocannon in remote turret; two Javelin missiles mounted on right side of remote turret; one 30mm AGL in rear remote turret

Signature: 2
Evasion: 2
Sensor Range: 10 km (+1)

2300AD™

Cargo: 12 passengers and 200 kg
Max Speed: 140 kph
Cruising Speed: 100 kph
Combat Movement: 300 m
Off-Road Mobility: Halved
Power Plant: 0.2 MW hydrogen fuel cell (two 0.1 MW units)
Fuel Capacity: 100 kg H₂
Fuel Consumption: 7 kg/hr
Endurance: 14 hours
Price: Lv30,000

M17A3

Type: Wheeled APC
Crew: Driver, gunner, commander
Weight: 3000 kg
Armor: As follows
Suspension: 0.3
Front and Overhead: 6
Rear: 6
Sides: 4

Armament: One DH30 30mm autocannon in remote turret; one 30mm AGL mounted next to autocannon in remote turret; four Javelin missiles mounted in pairs on either side of remote turret

Signature: 2
Evasion: 2
Sensor Range: 12 km (+1)
Cargo: Three passengers and 100 kg
Max Speed: 140 kph
Cruising Speed: 100 kph
Combat Movement: 300 m
Off-Road Mobility: Halved
Power Plant: 0.2 MW hydrogen fuel cell (two 0.1 MW units)
Fuel Capacity: 100 kg H₂
Fuel Consumption: 7 kg/hr
Endurance: 14 hours
Price: Lv35,000

Thunder ATV

Type: Wheeled ATV
Crew: Driver
Weight: 2000 kg
Armor: As follows
Suspension: 0.3
Front and Overhead: 1.5
All Other Faces: 1
Signature: 2

Evasion: 2
Sensor Range: None
Cargo: Two passengers and 2000 kg
Max Speed: 140 kph
Cruising Speed: 100 kph
Combat Movement: 300 m
Off-Road Mobility: Halved
Power Plant: 0.2 MW hydrogen fuel cell (two 0.1 MW units)
Fuel Capacity: 200 kg H₂
Fuel Consumption: 7 kg/hr
Endurance: 28 hours
Price: Lv 15,000

WEAPONS

The M17A1's weapons include the DH30 30mm autocannon, Javelin anti-vehicle missile, and M901 30mm and M901A 30mm autogrenade launchers.

DH30 30mm Autocannon

Type: 30mm conventional autocannon
Country: USA
Weight (Empty): 600 kg without mount
Length: 140 cm
Action: Single shot or bursts
Ammunition: 30mm×190mm fixed cartridge APHE Muzzle
Velocity: 1250 mps

Magazine: 100-round drums or 250-round hopper
Magazine Weight: 40 kg for drum, 90 kg for hopper
ROF: 4
Aimed Fire Range: 1200 m
Area Fire Burst: 10 (AFV=1)
Area Fire Range: 900 m
DP Value: 8 (+fragmentation burst radius=5m)
Price: Lv1200 (Lv20 for 100-round box; Lv15 for empty drum; Lv50 for hopper assembly)

Javelin Antivehicle Missile

The Javelin is a squad level antivehicle missile. The shoulder-fired weapon is based on the French Blindicide-3 design. Though the French weapon is now considered obsolete, the improvements in the Javelin, and its relatively low cost make it an affordable, light, antivehicle weapon.

Type: Hand-carried light antivehicle missile
Nation: USA
Launcher Weight: 15 kg
Missile Weight: 3 kg
Range: 1100 m
Guidance: Automatic following gunner lock-on
Homing Value: 13

Attack Angle: Overhead
DPV: As tamped explosion (EP=25)
Launcher Price: Lv1500
Missile Price: Lv1300

M901 30mm

Autogrenade Launcher

Type: 30mm vehicle-mounted automatic grenade launcher
Ammunition: Any 30mm propelled grenade
Magazine: Two 25-round cassettes (gunner can select from either magazine at will)
Magazine Weight (Empty): 1 kg
ROF: 2
Aimed Fire Range: 500 m
DP Value: Dependent on grenade used
Price: Lv900 (grenade prices vary by type; Lv5 for empty cassette)

M901A 30mm

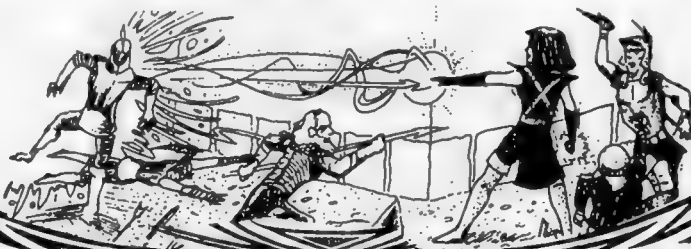
Autogrenade Launcher

This weapon system is identical to the earlier autogrenade launcher except that this unit only accommodates a single 25-round cassette. This makes it slightly less complicated and cheaper to manufacture.
Price: Lv700 (grenade prices vary by type; Lv5 for empty cassette) Ω

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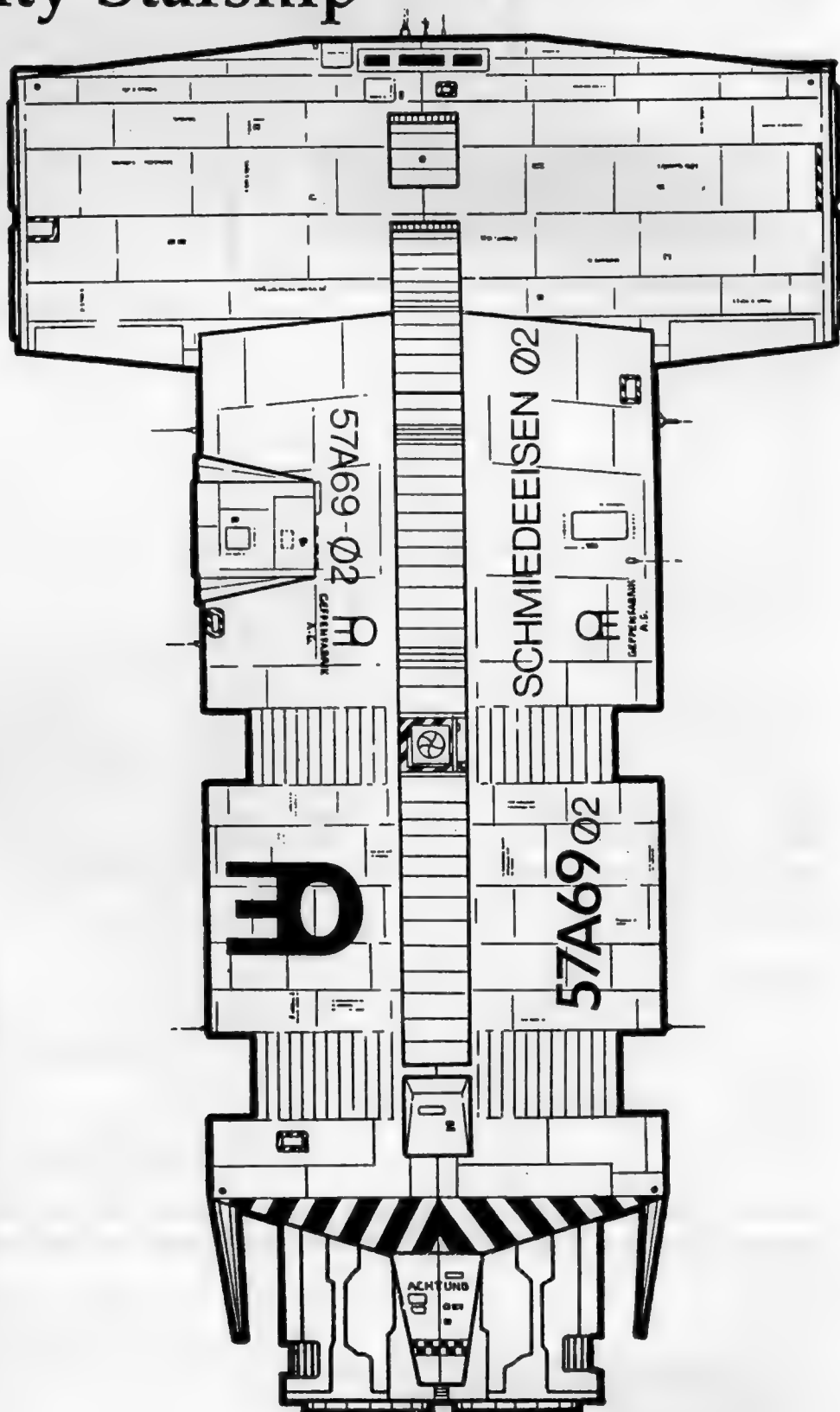


The *Stahlhammer*: German Utility Starship

Karl Martin

2300 AD

By mid-2292, the provisional German Unification Government had committed all its resources to the ongoing battle with French forces on Earth and along the French Arm. German hit-and-run and seizure raids using the new *Hamburg*- and *Helmut Korell*-class warships were unexpectedly successful, and the German high command decided to issue a specification for a blockade runner/resupply vessel to ensure the ability to hold and defend positions won from the French. Foremost among German concerns was the prospect of the French fleet gaining time and respite to dig in and reinforce its positions beyond Alpha Centauri.



Ship Status Sheet

Stahlhammer

Ship Name

Utility Starship

Ship Type

Germany

Owning Nation or World

Movement

8

Radial Reflected

3

Radial Profile

3

Screens

0

Lateral Reflected

4

Lateral Profile

2

Radiated Signature

5

Targeting Computer

0

Armor

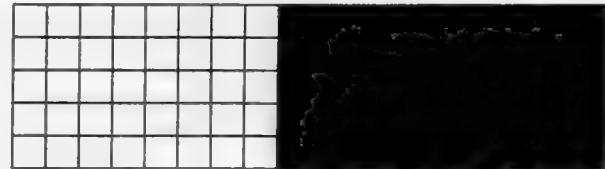
0

Hull Hits



Minor
Major

Power Plant Hits

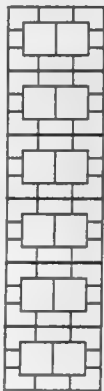


Inoperable

Surface Fixture Hits

—Weapons—

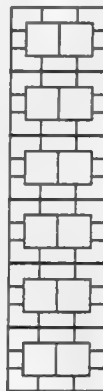
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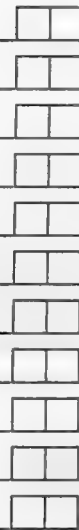


13. _____
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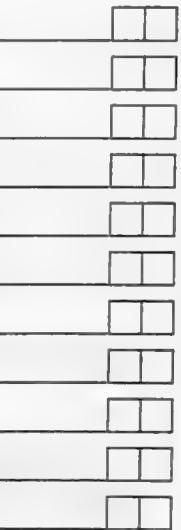


—TTAs and Submunitions—

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12. _____
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16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____



—Active Sensors—

4

—Passive Sensors—

0

Primary
Redundant



Primary
Redundant



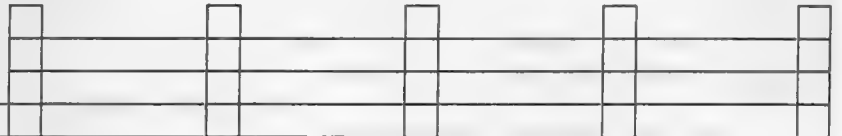
Critical Hits

—Computer—

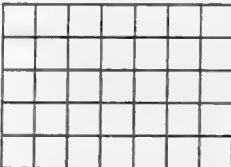
Primary



Active Operator
Passive Operator



—Life Support—
—Drive—
—Hangar Deck—
—Missile Bay—
—Continuous—



Captain
Navigator
Communications

Engineer
Computer

—Bridge—



Damage Control

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16



Ordnance

(record ordnance load and type)

10 X SR-9 Missiles

Crew

Comfort

0

Crew
Quality

STAHLHAMMER MK1A2 (ORIGINAL SERVICE MODEL)

Warp efficiency	4.19
Power plant	20 MW MHD turbine
Fuel	400 tons, enough for four weeks
Range	7.7 light-years
Mass	750 tons (unloaded)
Cargo capacity	3000 m ³
Comfort	0
Emergency power	Battery, 72 hours
Total life support	14
Price	45.28 MLv
Ordnance carried	10 SR-9 missiles

EISENHAND MK2A1 (Q-BOAT CONVERSION)

Warp efficiency	4.19
Power plant	20 MW MHD turbine
Fuel	1200 tons, sufficient for 12 weeks
Range	7.7 light-years
Mass	750 tons (unloaded)
Cargo capacity	250 m ³
Comfort	2
Emergency power	Battery, 240 hours
Total life support	14
Price	49.94 MLv
Ordnance carried	30 SR-9 missiles

CHIEN TSU (CHINESE FREIGHTER VARIANT)

Warp efficiency	4.19
Power plant	20 MW MHD turbine
Fuel	400 tons, enough for four weeks
Range	7.7 light-years
Mass	750 tons (unloaded)
Cargo capacity	5000 m ³
Comfort	-2
Emergency power	Battery, 96 hours
Total life support	16
Price	39.89 MLv
Ordnance carried	None

ALMIRANTE MONTOYA (BRAZILIAN INTELLIGENCE-GATHERING VARIANT)

Warp efficiency	4.19
Power plant	Two 20 MW MHD turbine
Fuel	800 tons, enough for eight weeks
Range	7.7 light-years
Mass	750 tons (unloaded)
Cargo capacity	150 m ³
Comfort	0
Emergency power	Battery, 48 hours
Total life support	19
Price	49.50 MLv
Ordnance carried	Five AAS 2B missiles

2300AD

The prestigious firm of Luftstahl Industries, A.G. was commissioned to develop a prototype for a fast, survivable, light-armed supply ship, with projected delivery to active units no later than early 2293.

Faced with a virtually impossible production schedule, Luftstahl Industries engineers hastily modified a medium freighter design which was already on the drawing board, adding structural bracing, hardpoints, and a drastically improved drive system and power plant. The first unarmed prototype (christened the *Stahlhammer* or "Steel Hammer") flew successfully on March 7th, 2293, just in time for the Franco-German armistice and formal world recognition of a reunited Germany.

Due to peacetime cutbacks in staff and funding, the German Navy was somewhat reluctant in accepting the first delivery of 14 *Stahlhammers*, and cancelled future orders as soon as these ships reached their active unit assignments. Although German crews found the ship pleasant to fly, and unusually fast and maneuverable for a transport, the Naval Materials Command had 12 of the original 14 *Stahlhammers* converted to Q-boat and light patrol duties.

Meanwhile, Luftstahl Industries was convinced that it had an excellent design on its hands (as well as one that had not yet fully paid for its own development costs). Accordingly, Luftstahl began aggressively hawking the *Stahlhammer* on the international market. After touchy contract negotiations, the Manchurians began producing the design under license, removing armor and weapons systems and renaming it the Chien Tsu. The Brazilians also purchased a license to build the design, outfitting their version as intelligence-gathering platforms and christening the variant class *Almirante Montoya*.

Basic hulls are currently being produced by Luftstahl Industries on Terra and Beta Canum Venaticorum, and by the Pu Lien Li and Rotanova shipyards on Terra.

While naval interest in the design is limited, many orders from private sector concerns ensure that the *Stahlhammer* and its variants will remain in production for many years to come.

VARIANTS

Stahlhammer MK1A2: Standard original design freighter/blockade runner.

Eisenhand MK2A1: Original design modified to Q-boat/rear patrol ship.

Chien Tsu: Manchurian freighter version, unarmed and unarmored.

Almirante Montoya: Brazilian electronic surveillance ship (details classified). Ω

GDW System Overview

2300AD

Man has made it to the stars. Now he has to fight to stay there. Human soldiers fight the implacable alien Kafers. Police fight smugglers, pirates, and terrorists on rich human colonies. Explorers fight the uncharted systems of the frontier. Colonists fight hostile environments on strange worlds. And nations fight each other for political power to determine who will lead the human race in its struggle to tame the universe. You can be a part of this new age in **2300 AD**—state-of-the-art in science-fiction role playing.

2300 AD plays against a background of Earth and its colonies 300 years after WW III, the Twilight War. In a world where nations still clash, civilization has crawled back to its prewar levels and beyond. The world is dominated by the Third French Empire, which maintains a shaky peace among its jealous rivals. Earth's 100 nations have colonies among the stars. First contact with aliens came long ago, and commerce with them is now commonplace.

Civilization has flowered to a point only dreamed of earlier, but worms are at the blossom's core. One alien race, the Kafers, is bent on eradicating humanity. Anarchists labor to bring Earth's rule crashing down. Smugglers transport alien products to other worlds, thoughtless of ecological effects. Pirates prey on merchant and colonization vessels.

Much work remains to be done if humanity is to establish itself among the stars and explore deeper into the galaxy.

The world of **2300 AD**, from its detailed history to the rules governing play within it, is presented to you in two concise booklets: the *Adventurer's Guide* and the *Director's Guide*, both included in the **2300 AD** boxed set.

The *Adventurer's Guide* is directed at the individual players of **2300 AD**, giving them information they will find useful while playing the game. It provides background on the future uni-

verse, describing what nations exist on Earth and what colonies they have out among the stars. It covers character generation, and the varieties of equipment that can be purchased and used. The **2300 AD** *Adventurer's Guide* also covers technology, vehicles, and weapons available.

The *Director's Guide* is directed at the referee, providing basic game rules that govern **2300 AD**. These rules cover task resolution, starships, personal combat, and world genera-

tion, as well as more specialized topics such as experience and renown, aliens, non-player characters, world mapping, and a variety of useful political maps.

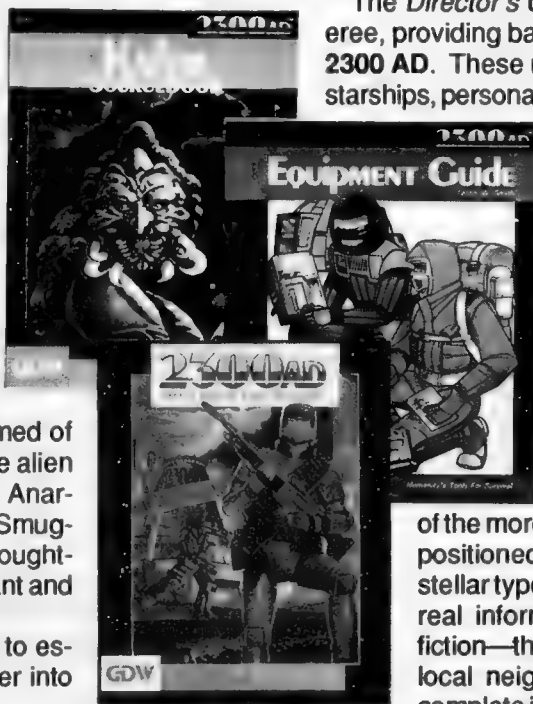
The Near Star Map is a glossy, full-color, 22-inch by 25-inch poster-sized map of all the star systems within 50 light-years of Sol. Every one

of the more than 750 stars are named, positioned, and color coded as to stellar type. Compiled from accurate, real information, this is no work of fiction—this is the definitive map of our local neighborhood of stars. More complete information on each star and

system is given in the accompanying *Near Star List*, which gives accurate coordinates, stellar spectra and magnitude, and a complete list of companion stars.

THE KAFER WAR

First contact with the Kafers came at the edge of the French Arm, and as we offered peace and cooperation, the Kafers prepared themselves for war. On worlds such as Aurore they came with their warships and deathsleds, laying waste to the land and exterminating humans as they found them (see **Aurore Sourcebook** and **Kafer Dawn**). But the humans beat these meager forces back, recapturing worlds and launching daring operations to free human captives (**Mission Arcturus** describes one such mission). But the Kafers had been busy, and they launched an offensive of such power that they overran virtually all of the French Arm, destroying human ships, killing human soldiers, and subjugating human populations. Only with the cooperation of all nations has humanity pushed the Kafers back, but their legacy along the



2300 AD PRODUCTS LISTING

Code	Title	US Price
1000	2300 AD	\$20.00
The revised rules set, includes <i>Adventurer's Guide</i> and <i>Director's Guide</i> , plus the Near Star Map.		
1010	Aurore Sourcebook	\$10.00
Humanity's furthest outpost, under siege by Kafers.		
1011	Ships of the French Arm	\$10.00
The starships of a dozen human nations.		
1012	Nyotekundu Sourebook	\$10.00
Mining outposts in a deadly star system.		
1013	Colonial Atlas	\$10.00
The new worlds of mankind's stellar civilization.		
1014	Kafer Sourcebook	\$10.00
Ultimate knowledge of humanity's implacable foe.		
1015	Earth/Cybertech Sourcebook	\$10.00
Political and social division on the edge of technology. Contains rules and background for all cybertech adventures.		
1030	Beanstalk	\$8.00
Troubleshooting on Beta Canum's elevator to the stars.		
1031	Energy Curve	\$8.00
A marooned expedition on the Kafer frontier.		
1032	Kafer Dawn	\$8.00
The front line of mankind's fight for survival.		
1033	Mission Arcturus	\$8.00
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1034	Invasion	\$8.00
The future of humanity hangs in the balance.		
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Man's monumental voyage to the Pleiades.		
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The hardware of an interstellar civilization.		
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Texan adventure on the Eber homeworld.		
1050	Star Cruiser	\$20.00
The exciting game of starship combat for use in the 2300 AD game system.		

2300AD

French Arm will be long remembered (*Invasion* chronicles the seesaw battles of the Kafers' onslaught).

Why are the Kafers bent on destruction? What are their worlds like, and what is their technology? Let **2300 AD** be your tool for unlocking the many mysteries of the Kafers, the most deadly threat mankind has ever faced.

EARTH'S DECADENCE

Earth is home. Even after years spent wandering among the colony worlds, where every turn brings new discovery, a man's heart quickens as he returns to the planet that gave him life. And Earth's cities hold surprises to rival those found on alien worlds.

As the center of human civilization, Earth is the cornerstone of its accomplishments. Its beanstalk is the single greatest construction project ever attempted. Its cities are tall, and its riches, unimaginable. Of course, as high as the rich might soar among Earth's clouds, its wretchedly poor are kept down, huddled together in the underworlds of a hundred megacities.

Technology is master of the underworld. Technology has opened the door to the world of the electronic net. The lawless hackers and the overextended security forces of the governments and corporations fight in their arena of circuitry and data fields. Technology has also opened the door to bionic enhancement, and half-mechanical warriors rule the dark streets of the underworlds. Their wars and adventures characterize life on Earth in **2300 AD**, a life of danger and wonder at every turn.

Future Releases

2300 AD's continues to expand, with emphasis in the next 18 months on cyber, based on **Earth/Cybertech Sourcebook**, two 1990 releases, and **Challenge** coverage of the entire cyber game genre.

Upcoming Releases: Deathwatch Program (February 1990) takes up where **Earth/Cybertech Sourcebook** leaves off, with a cyber-oriented adventure and additional source material.

Rotten to the Core (September 1990) continues the **2300 AD** cyberpunk adventures on Earth with the rocking adventures of the Soho Kid and other underworld figures of the gigantic cities.

Challenge: Every issue of **Challenge** has feature articles on **2300 AD**, from new equipment and adventures to developments in the Kafer War. **Challenge** allows directors and adventurers to pick and choose from a plethora of interesting new items and information, modifying their campaigns to best suit their gaming interests. Ω

City of Angels

Ever since the world as we knew it ended, people have been saying that chivalry is dead — they've been saying it for a long time anyway, but this time they're sure. No one does anything for any motive except survival. Dog-eat-dog, survival of the fittest, might makes right... I've heard all those cliches and more. And I refuse to conform to them. Lieutenant Jimenez wanted me to take his St. Christopher's medal to his folks in L.A. No reward, no treasure at the end of the road. Just a favor to a friend, that's all. I promised I'd do it, and I will.

City of Angels is a module for use with GDW's World War III role-playing game, **Twilight: 2000**. The adventure takes place near the blasted ruins of the Los Angeles area of Southern California. The story revolves around the obligation of one of the players to an old commanding officer. Living up to his promise thrusts him, along with his companions, into a journey through the hardest hit areas of the nuclear exchange of World War III. The group must contend with all the harsh realities of post-holocaust life, complicated by rival gangs warring over territories in what was once known as the *City of Angels*.

Information presented in this module includes source material and maps for the L.A. and Orange County areas, an overview of Southern California, and optional rules which include civilian character generation.

City of Angels can be run on its own, or can be easily adapted to fit an existing campaign.

Design: Craig Sheeley

Development: Craig Sheeley, Jay Adan

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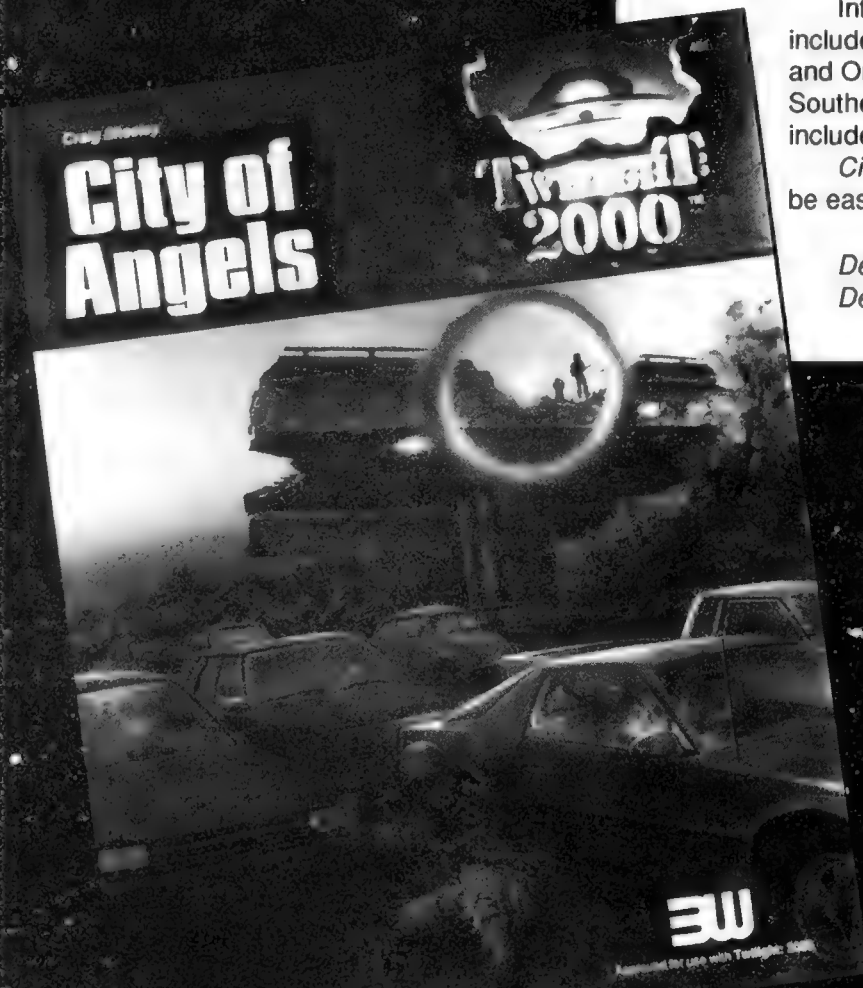
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2300AD

Anatomy of a Space Mine

Karl A. Bergman

The purpose of this article is to establish a standardized set of guidelines for the design and operation of space mines for use in the **2300 AD** and **Star Cruiser** games.

Throughout history the primary purpose of mines has been to deny hostile forces access to an area. In space the area to cover with mines is much larger than it has been at any other time in history; however, a single space mine is capable of covering a very large volume of space. In fact, a space mine's area of operation can cover a sphere of up to a 900,000-kilometer radius.

Space mines come in several different types. The *standard mine* is equipped with a short-range passive sensor; a control unit; a small but long-lasting battery with a solar panel, which can be deployed when the battery runs low (normally the battery will last for six months and requires 12 hours to recharge once the solar panel is deployed); a detonation laser as its warhead; and a casing to hold it all. When two standard mines in different hexes both meet the parameters for detonation, both will detonate at the same target at the same time.

Control mines have a larger control unit, more powerful sensors, and a transmitter. They are capable of controlling other mines and command detonation mines.

Command detonation mines are little more than a warhead and a receiver, detonating when told to do so by another device. Command detonation mines can only be set to detonate when ordered to do so by some outside device. This device could be a control mine, or a ship or station.

STANDARD MINE DETONATION SETUPS

Target Range: A space mine can be set to detonate and fire at any ship which enters its own hex or an adjacent hex.

Radiated Signature: The mine can be set to detonate and fire at the following: any radiated signature, any specified or larger signature, any specified or smaller signature, or only a specified radiated signature.

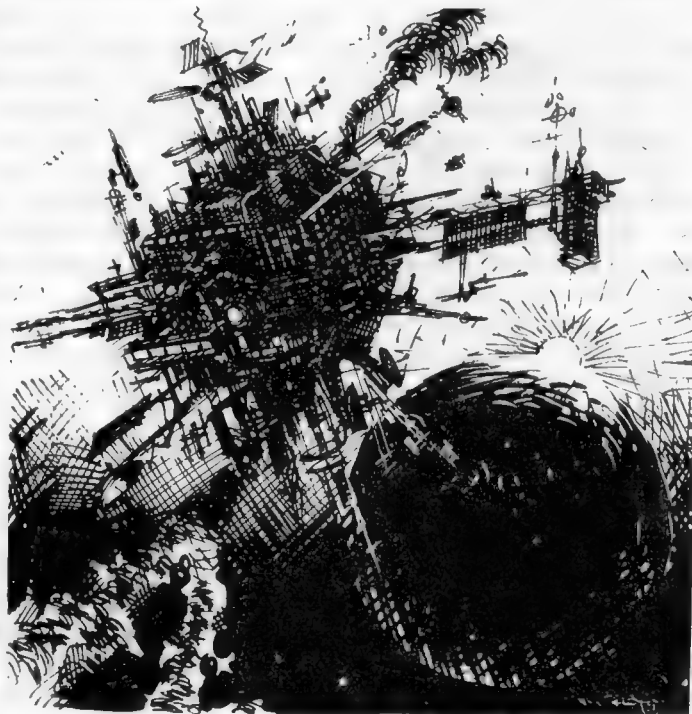
Example: A base whose only protection is small ships which have a maximum radiated signature of 3 might set up a mine field with mines set to fire at any target with a radiated signature of 4 or greater which enters the mine's hex.

CONTROL MINE DETONATION SETUPS

A control mine can be set to the same conditions as above, and will fire itself or any mine under its control which meets the set conditions. A control mine will not detonate until all mines under its control have detonated, unless it is ordered to do so by a controlling ship or station. If this happens, then

unless the remaining detonation commands were also set to receive orders from a nearby ship or station, these remaining mines will not be able to detonate. If more than one command detonation mine is in a single hex under the control of a control mine, then specific orders must also be set as to how many of those mines are to be detonated at a single target exposure. A ship or station setup in control of a group of command detonation mines may always select when and how many mines will detonate at a given target. If a target survives an attack and additional mines still exist in the attacking hex, then an appropriate number of them will fire at the target during the target's next movement, if it still meets the detonation parameters. The maximum range at which a control mine (station or ship) can control a command detonation mine is five hexes.

We continue our
series of articles detailing
space combat weapons systems
of the early 24th century.



Example 1: A control mine is set up with six command detonation mines under its control. The six mines are set up in a globe with the control mine as its center. The globe has a radius of three hexes. The control mine has a passive sensor suite with a range of five hexes and has orders to fire at any target with any radiated signature which enters an adjacent hex. If the control mine detects a target entering an adjacent hex of one of the mines under its control, it sends a signal to that mine telling it to fire at the target. If a target

perform an all-stop maneuver, and then deploy the mine from its cargo hold. The number of crewmembers required in the cargo hold is equal to the mine's mass (rounded up). For each crewmember less than that number, one additional turn at all-stop is required to deploy the mine. At least one person must be in the hold working on the deployment in order to deploy mines. Specialized minelaying ships have crewmembers assigned to the ship to perform this task; however, other ships must use damage control parties for this function.

STAR TREK®



RICK HARRIS

SHASTA-CLASS IX ROBOT FREIGHTER

Construction Data

Model Number: MKI
Date Entering Service: 2/2001
Number Constructed: 106
Cost: 375.55 MCr

Hull Data

Superstructure Points: 29
Damage Chart: C
Size
Length: 230 m
Width: 166 m
Height: 65 m
Weight: 128,045 mt

Cargo

Cargo Units: 5,850 SCU
Cargo Capacity: 292,500 mt
Landing Capability: None

Equipment Data

Control Computer Type: M-2
Transporters:
Standard Six-Person: 2
Cargo: 6

Engines and Power Data

Total Power Units Available: 32
Movement Point Ratio: 3/1 / 7/1
Warp Engine Type: FWE-1
Number: 2
Power Units Available: 8 each
Stress Charts: G/K
Maximum Safe Cruising Speed: Warp 7/4
Impulse Engine Type: FIF-2
Power Units Available: 16

Shields Data

Deflector Shield Type: FSH
Shield Point Ratio: 1/2
Maximum Shield Power: 12

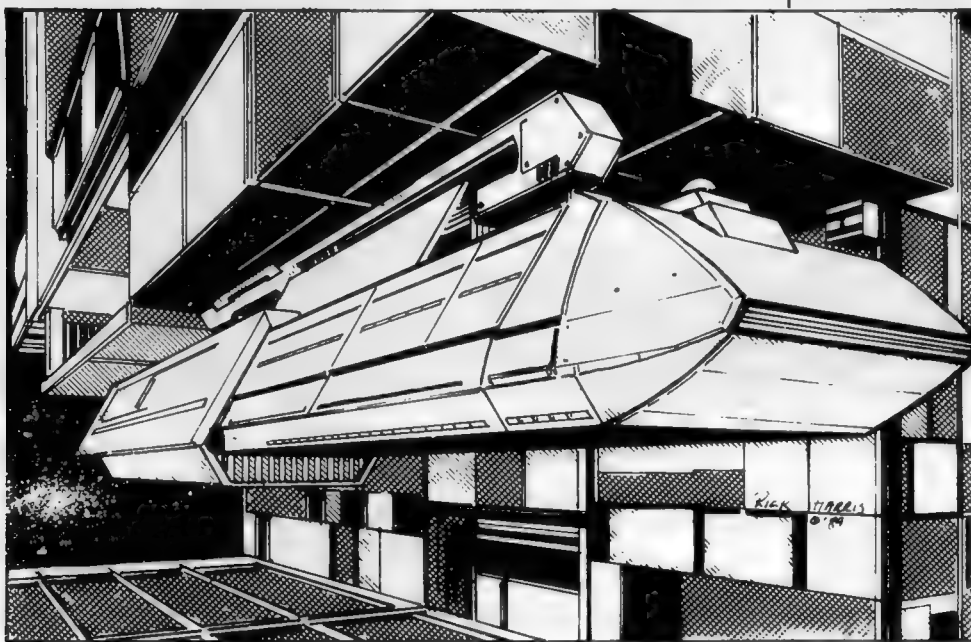
Combat Efficiency

D: 88.5/13.0
WDF: 0

Figures are for unloaded/loaded. Ω

Federation New Lynn-Class Passenger Liner

John A. Theisen



STAR TREK®

The New Lynn-class passenger liner, entering service in 2/1701, was designed and manufactured by North Shore Starship Constructors, LLC., a small but rapidly expanding shipbuilding firm headquartered on Alpha Centauri. Every aspect of this ship's design has been devoted to providing the greatest possible benefits to passengers at the lowest possible fee. The L-12 computer, FIA-2 impulse propulsion unit, and navigational shield generators were selected for their overall reliability, economy, and cost efficiency. Moreover, this design's thrifty nature permits ship captains greater flexibility in cargo speculation and a less formidable financial break-even point.

However, this cost efficiency has

drawn occasional grumblings from crewmembers, some of whom have stated that "the shields wouldn't stop an Orion hand phaser."

More significantly, the FWI-1 warp engine mounted above the hull's centerline has been a source of infrequent but erratic problems, usually involving the starship's matter/anti-matter balance.

While travelling on impulse power just before the warp engine is engaged, the calculated intermix formula occasionally has failed to fuel the engine correctly. This requires the Engineering Officer to shut the warp engine off completely and recalculate it from scratch (an annoying but harmless delay of up to several hours), or proceed without delay and risk an uncontrolled engine implosion (or worse, the Wormhole Effect). Some have claimed that this flaw may explain the loss of at least one New Lynn-class liner, particularly since the SS *Porirua* reported having had intermittent engine shutdowns shortly before its disappearance.

Oddly, this intermix problem does not occur regularly, and it has not been reported on other starship classes using the FWI-1 engine.

As a result, engineers now believe it is some type of circuitry problem unique to these liners. Starships of this class may be recalled for appropriate modifications as soon as the situation can be corrected.

But most New Lynn passengers are unaware of these problems, unless their own schedules become adversely affected.

Despite the relative austerity of major shipboard systems, the passenger staterooms and lounges are extraordinarily comfortable (even if a bit on the small side). Many have described the shipboard facilities as "cozy," generally with an endearing

ticket price to match. All in all, this class is ideally suited for moderately fast shuttle operations in areas of Federations space with high stellar system density. In fact, this ship's popularity as a private charter vessel is just beginning to grow.

The ship's hull, nearly rectangular in shape, is divided into six decks, with passenger staterooms on decks four and five (assuming that the uppermost deck is one), and the cargo area on deck six. The cargo area is a particular innovation of this liner. Individually sealed 0.5 SCU storage lockers are assigned to each passenger stateroom, and the guests are permitted unlimited access to their own cargo while in transit.

Of the 65 *New Lynn*-class passenger liners constructed as of 2/2305, 61 remain in commercial or private service, 1 has been destroyed, and 3 are listed as missing. This class, manufactured and constructed at Sol IV, is still being produced at an average rate of 10 ships per year. There is also a report that Star Fleet Command is now interested in this design and may place an order within the next standard year.

NEW LYNN CLASS II PASSENGER LINER

Construction Data

Model Number: MKI
Date Entering Service: 2/1701
Number Constructed: 65
Cost: 9.56 MCr

Hull Data

Superstructure Points: 5
Damage Chart: B
Size
Length: 31.5 m
Width: 20 m
Height: 17.5 m
Weight: 8700 mt

Cargo

Cargo Units: 35 SCU
Cargo Capacity: 1750 mt
Landing Capability: Yes

Equipment Data

Control Computer Type: L-12
Transporters:
Standard Six-Person: 2
Emergency 22-Person: 1
Cargo: 1

Other Data

Crew: 16

STAR TREK®

Passengers: 55

Engines and Power Data

Total Power Points Available: 7
Movement Point Ratio: 1/1
Warp Engine Type: FWI-1
Number: 1
Power Units Available: 5
Stress Charts: L/M
Maximum Safe Cruising Speed:
Warp 5
Emergency Speed: Warp 6
Impulse Engine Type: FIA-2
Power Units Available: 2

Shields Data

Deflector Shield Type: Nav. only

Combat Efficiency

D: 0
WDF: 0 Ω



Andurian from *Letus 5*

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The Emperor's Bag of Tricks

The Emperor remains in power by using his faithful warriors to their fullest potential. In much the same way, the battle-hardened marines utilize their equipment to maintain the upper hand on the combat field. New discoveries and inventions constantly provide surprises to an unwary foe. It would be more enjoyable for regular players of *Warhammer: 40,000* to let their gamemaster read through this list of equipment and then, when the equipment comes into play, it will be up to the gamemaster's discretion what to let the players know about the pieces in play. But anyone may read at the risk of losing a little of the fun of surprise.

Each piece of equipment includes the technical level and point value for the convenience of the gamemaster.

AIR SPONGE

One of the many intriguing aliens found on the deathworld Cornelius is what they call the air sponge. This creature lives off of the air around it, and its hunger is voracious. The hardy colonists

have adapted them to fend off the deadly gasses that constantly reduce the human population. The alien is trapped and constricted inside a prison sphere roughly the size of a hand grenade. When released in an area, the sponge gorges on the air around it, absorbing the air in a two-inch radius. Any gas within that radius is sucked into it, leaving any units clear of the gas' effect. If a model has been within a gas cloud for one turn already, it still suffers from the gas' influence. The vacuum created is so strong that it will even put out any nonchemical fire within a one-half-inch radius. Because of the force, any model within the two inches is knocked off balance and cannot do anything for the remainder of the turn. Those without any breathing apparatus have their breath taken away and are fined another turn of any action as they try to regain their air. Any models wishing to use the device the very turn a gas cloud descends on them, must first test their cool on 2D6. After the sponge is used, a one-half-inch ball is placed on the game board and is effective only for breaking line of sight for the rest of the game.

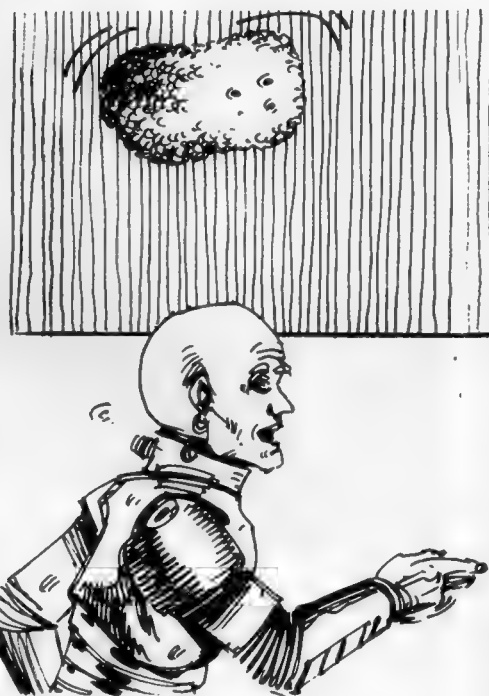
Technical level: 5

Points: 2 (The air sponges are quite plentiful, and Cornelius is easily accessible.)

ATTRACTION/REPULSION FIELD GENERATOR

(Tank mount and ground emplacement.)

This device was developed by the Techpriest Selyz to defend himself against a small chapter of the renegade Dark Sons. It disrupts the warp field to move any large object or two small objects lying directly in front of the generator 20 inches toward or away



from the 1" by 1" projector. Pieces closest are affected first. Because the generator is too heavy to be transported by normal troops, it is usually mounted on the front of large vehicles or placed on swiveling ground mounts. The victims of this generator are usually sucked into a deadly set of spikes or ramming steel attached to the projection plate. Any unit smashing into another model is due for collision damage. Selyz effectively disorganized the besieging Dark Sons by picking out the leaders and sending them far away from their confused comrades. For gaming purposes the generator is made up of a 1" by 1" by 3" rectangular box attached to a 1" by 1" projection plate either directly or by a cord of any length. The generator has a Toughness of 5 and a Save of 6 (except the cord which has a Save of 5 or 6). If any part of the machine is destroyed, it

**"New discoveries
and inventions
constantly
provide surprises
to an unwary
foe."**

will be ineffective for the rest of the game.

Technical level: 7

Points: 90

BATTLE CART

This unusual vehicle requires no driver. It is meant to be used as an equipment transport. The cart is given orders for movement either through a communicator attached directly to the back of the transport, or by a closed-frequency communicator given to one personality figure. It takes one turn to give the cart an order just as if it were the member of a squad. Orders must be given through one of the two communicators, and then the vehicle performs that movement order without fail, even if it ends up

equipment. If the doors are still closed, a turn must be spent by a model at the rear of the cart to give the doors an order to open up. If a particular piece to be inserted into the cart would exceed its carrying capacity, that object is rejected and may not be jammed in.

Max speed: 10

Acc./Dec.: 5

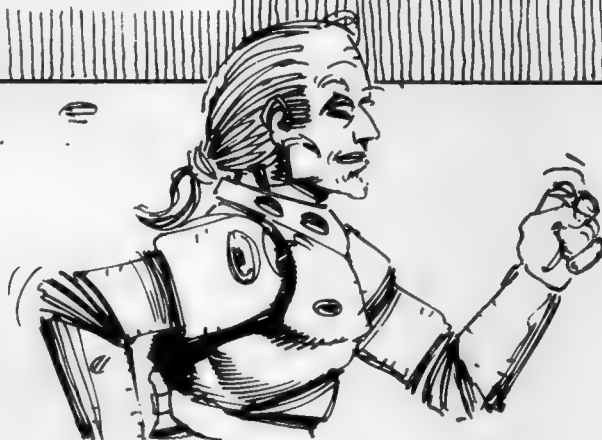
Turn: 1

Toughness: 10

Dam.: 30

Save: 4-6

Eq.: 20



running into an obstacle or running over friendly troops. The cart's orders should be written down on a slip of paper (the exact directions are not necessary, just the location where it is to stop, whether the transport's access doors are opened for convenience to friendly troops, and what its speed is to be). The only way to stop a battle cart once it is in running mode is to use the communicator to alter its programming. But only the personality figure may operate the communicator, so if he is dead it is useless. The communicator must be within 75 inches of the cart, or it is out of range. It may be ordered to follow a unit or another vehicle, but if forced to go faster than its maximum speed it will stop immediately and await new orders. Once a unit is adjacent to the battle cart (1 inch or closer), that particular model may take a turn to load or unload a particular piece of

SPECIAL DAMAGE EFFECTS

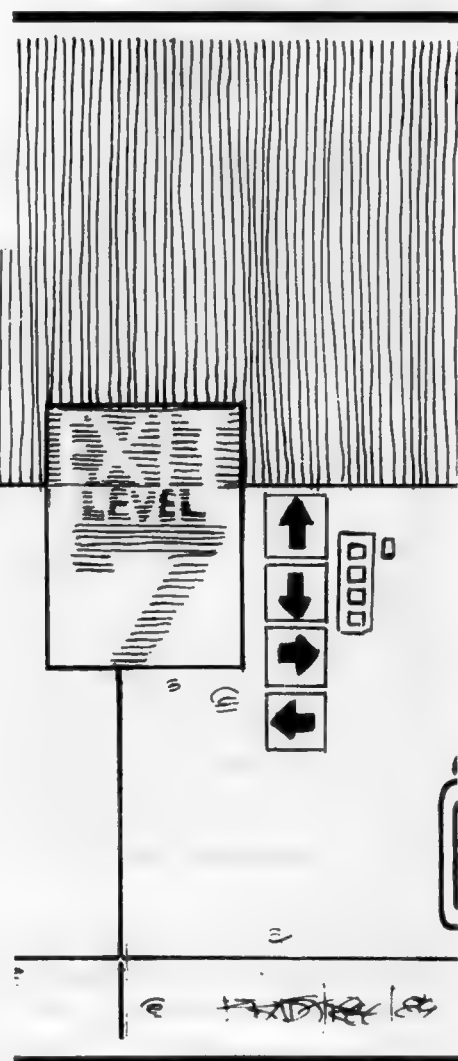
Die Roll	Result
1-3	Out of control
4-6	Stops
7-9	Random damage to cargo
10-12	Explodes

Technical level: 7

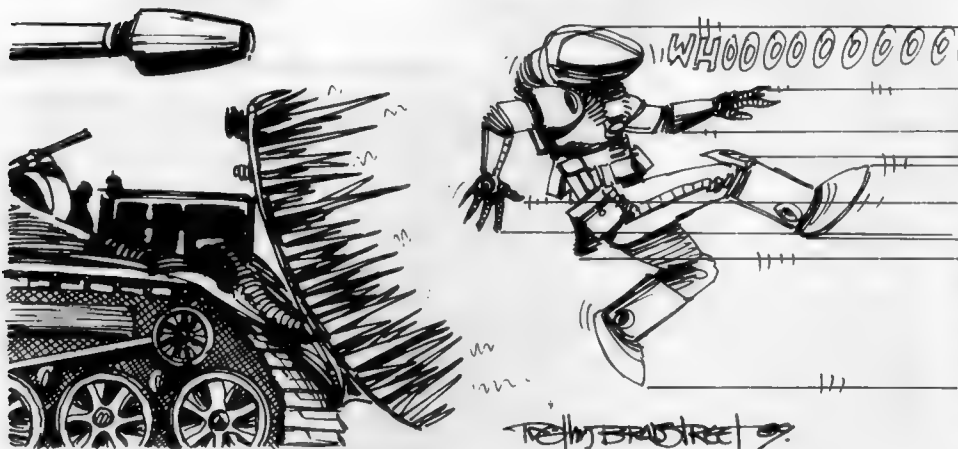
Points: 261

GROUND GLAZE

A slippery substance contained in a grenade or missile. When the missile is detonated on or over the playing field, the glaze reduces any model's movement within the glaze's effective area to zero due to its extreme chemical lubricant. It is generally effective for a two-inch radius, but larger amounts may be purchased. The glaze makes the ground completely impassible except for flying



"...If forced to go faster than its maximum speed it will stop immediately and await new orders."



vehicles and ground vehicles moving fast enough to pass over the glazed area in that turn. Any ground vehicle bold enough to attempt crossing the patch is counted as out of control. Troops entering or already within the substance are stuck there for the rest of the game, unless the models may come in contact with free units. Some units are lucky enough to be outfitted with ground glaze solvents, and they may move through it one inch per turn. Models that were stuck in the initial attack must pass a test of cool in order to remember the solvent (T: 5 P: 5).

Technical level: —

Points: 5 (per every two inches, and can be divided in any amount of canisters.)

"...Through vaguely the same process as what keeps the venerable Emperor alive, the victim is sucked dry of all his current wound status."

HOLOSHIELD

Worn like a belt, this isn't really a shield as much as a holographic projector that distorts and refracts a character's appearance. It partially conceals the model's position to all, but is more effective against foes locked in close combat than long-range opponents. Its disconcerting nature does not confound a barrage of bullets so much as it does a frantically swinging enemy. When on, it adds 1 to a character's Toughness and adds 2 to a character's Weapon's skill, as sudden movements are hidden and feints exaggerated. If a character is hit and a save is made, there is a one in six chance of the belt being destroyed. Any area effect blasts disrupt the displacer so much that it has a one in six chance of not being destroyed, no matter whether a save is made or not.

Technical level: 7

Points: 1 1/2

LEACH POD

Medic equipment used mostly in conjunction with the later mentioned stasis jacket, leach pods aid a side best in a campaign game. The medic spends a turn placing an inactive adjacent model (usually an important personality) into the pod (for gaming purposes some plastic wrap to cover the model is fine). Then the medic searches for a person to plug the pod's cord into (the cord can be of any length and must be attached to the pod). Usually it is an un-

conscious enemy subdued by a web or a poisoned needle, or sometimes the cord is inserted via a successful close-combat blow, or into a willing friendly unit.

Once the cord is attached to the host model, the leach pod's process is spontaneous, and through vaguely the same process as what keeps the venerable Emperor alive, the victim is sucked dry of all his current wound status, and the character in the pod receives half of it. It usually takes two victims before the injured or nearly dead character may be extracted from the pod and perform activity as normal. It takes a turn to remove a model from the pod. Only a medic knows how this piece of equipment is operated. Power-hungry governors have been known to dry out a whole town in order to gain superhuman strength. The victim must be a living body, not a piece of equipment.

Technical level: 7

Points: 100

ORB OF DESTRUCTION

Found in ancient psyker fortresses but believed to be of Slann origin, these objects are used to defend property and buildings not meant to be trespassed. A piece will represent them on the gaming board (they float at head level). Ferocious, they know no master. A being with intelligence of nine can activate one, and once activated and released, it attacks the nearest model within 20 inches. Their container is usually opened by a simple activator that allows the user to be at a safe distance when he opens it. If there is nothing to be attacked, it waits until a target presents itself. It attacks in the same way that a normal unit closes for personal combat. It flies up to 10 inches at a model during the owning player's movement turn, ignoring all terrain. Once it reaches a model, it engages in close-combat. After all saves, if the orb misses, it travels in a straight line past the model to use up the rest of its movement. If there is another model past it, that unit is attacked. If it hits, the character who has been hit is dead—there is no hope, no matter how many wounds that the character possesses. The manner of death is so grotesque that it causes all friendly units

within four inches to test their cool or rout. If the orb hits a leader, the rest of the squad automatically routes. These orbs have many different means of dispatching the pitiful victim, such as draining or boiling the blood, or mutilating the body. A piece of it may also drop off and implant itself in the character, apparently causing only a stinging wound. Unbeknownst to the character, he has been turned into a living bomb that will blow up in D6 turns, exploding with the equivalent of a blast grenade.

Move: 10

BS: 3

Toughness: 2

Wound: 1

Initiative: 3

Attack: 1

Technical level: 9

Points: 50

PSYONNEGATOR CAP

Found in a tyrannid ship and then traced to at least 1000 planets, these gelatinous aliens tend to absorb psychic power and protect even the weakest of minds. Many humans cringe at the thought of placing an alien on their head, but wise marine chapters require their men to wear them. The creature is durable and does not eat or excrete waste. When it is worn on the head of a unit under psychic attack, it adds three to the psykers roll for success. If the psyker succeeds despite the hindrance, the alien receives a wound. The psyonnegator can only receive two wounds this way, and then it dies. The wearer becomes aware of psychic activity because the alien shifts restlessly on the head. A psyker wearing the cap is useless unless the psyonnegator is

killed off by psychic or other means. If the psyonnegator is exposed to any foreign gas, it will die.

Technical level: 5

Points: 75 (per hat)

SPY MISSILE

Launched by a missile launcher, it flies 72 inches across the board and broadcasts what it spots to a communicator held by a member of the same squad. Anything hidden within the 10-inch-wide by 72-inch-long arc of flight that can be spotted from above is revealed for that turn to the squad that owns the missile and any units within communication distance.

Technical level: —

Points: 5

STASIS JACKET

The jacket is really more like a fully sealed suit, but can be worn under any clothing or armor. With the push of a button, the suit patches up any holes that might exist from damage and puts the wearer in a field of stasis, making him impervious to further damage. These are to be used by personality figures whose existence is important to a side and whose life is in jeopardy, or who suffer from a mortal wound. A character can activate the field any time, even if it's not his turn. The jacket should be used if the wearer feels that an impending round will be lethal. If the character still has one wound, he is not harmed and slips painlessly into a rift in time. If the character did not activate the field until hit and the damage done is enough to kill him, there is only a two in six chance of activating the field in time to save the wearer (although the char-



acter's wound is reduced to zero). Only a company medic may bring a model out of stasis, and the model must be treated immediately after the jacket is turned off. A character of zero wound can be transported into a leach pod, and then the stasis jacket turned off without risk of death. Alien and unfriendly forces obtaining a character in stasis will not be able to solve the code system to deactivate the field for 2D10 days, making it impossible to use the character any further in the scenario if all that are left are enemy units.

Technical level: 6

Points: 50 Ω



RENEGADE LEGION

John A. Theisen

Commonwealth *Swiftsure*

The *Swiftsure* is a specialized, high-speed "escape" fighter. Fast and heavily-defended, it nonetheless possesses a distinctive appearance, and its mere presence often attracts undue attention.

Despite its absence of fixed weaponry, most *Swiftsure* pilots love their craft, admiring its remarkable speed and its thick-skinned defenses. Only the Commonwealth's *Fluttering Petal*, a fighter

The *Swiftsure*, a specialized high-speed "escape" fighter, has been used by the Commonwealth since 6816 for transporting valuable digni-

taries and precious cargo. Though an effective design in theory, it has been a mixed blessing in practice. Fast and heavily defended, it nonetheless possesses a distinctive appearance, and its mere presence often attracts undue attention. This, in turn, occasionally leads to a hazardous pass through the solar system, opposed by hastily scrambled TOG interceptors. Even so, the *Swiftsure* is perhaps the most effective fighter/courier in Commonwealth service today.

Lacking an FTL drive, the *Swiftsure* is most often used for high-speed penetration from a mothership to a planet or station, or vice versa. Blockade running, evacuating VIPs from combat areas, transporting military and political leaders, and carrying invaluable small-mass cargoes are some of the missions this class performs best. Unfortunately, a lack of reconnaissance equipment has prevented it from being used for deep-space patrols, an oversight that some Commonwealth leaders still complain mildly about.

The design criteria for this class included maximum practical shielding and armor, limited passenger and cargo capacity, antigrav capability, and the highest acceleration possible. One look will show that production cost was never a consideration. In fact, the *Swiftsure*, whose name symbolically describes the vessel's nature, is among the most expensive fighters ever built, ton for ton. (Among well known classes, only the Commonwealth's *Cheetah* is marginally more expensive.)

with more than twice the mass, has roughly comparable armor and shielding. The *Swiftsure* can outrun virtually anything, and is usually escorted by a pair of *Cheetahs* when speed alone might not be enough. Few people outside the Commonwealth realized the *Swiftsure* was deliberately designed to outmaneuver the TOG's *Lancea*, until their first encounters took place. The *Lanceas* came out second-best several times, and TOG pilots finally realized exactly what they were pursuing; they've had a healthy respect for the courier ever since.

A limited offensive potential is possible with four hard points, but the *Swiftsure* would never be sent into combat intentionally unless there was an acute shortage of other battleworthy fighters. The craft is simply too expensive to be used in this way unless absolutely necessary. In its more customary courier role, however, a common hardpoint payload might consist of one ECM pod, two ECM missiles, and a TGM MKI.

With such a specific mission and high price tag, the *Swiftsure* is understandably rare; it is extremely uncommon to find more than one squadron in any Commonwealth fighter wing so equipped. In Shennedam County, *Swiftsures* are serving with the 369th Naram Fighter, 1151st Interceptor, and 345th Commonwealth Carrier wings.

In recent action, several of this class escaped from Defiance with remnants of the now-defunct 321st Interceptor wing.



Class: Light Fighter

Mass: 99

Cost: 3,104,350

Engines: As follows

Center Engine Rating: 900

Right Engine Rating: 800

Left Engine Rating: 800

Thrust: 12

RENEGADE LEGION

High Thrust Modification: None

Streamlining: No

AntiGrav: Yes

Passengers: 4

Cargo: 1

Shields

Bow: 70

Right: 60

Left: 60

Stern: 80

Armor

Bow: 90

Right: 80

Left: 80

Stern: 100

WEAPONS

Type	Location	Range				
		1	2-3	4-6	7-10	11-15
Hardpoint	L/Wing					
Hardpoint	Bow					
Hardpoint	Bow					
Hardpoint	R/Wing	Ω				

Gama Announces Origins Awards for 1988

Best Historical Future Series:

1200 AD Line: The Aztec Army, Ral Partha Enterprises

Best Fantasy or Science Fiction Series:

TSR's AD&D Series, Ral Partha Enterprises

Best Vehicular or Accessory Series:

BattleTech Mechs, Ral Partha Enterprises

Best Miniatures Rules:

To the Sound of the Guns, Johnny Reb, GDW

Best Role-Playing Rules:

GURPS Basic Set, 3rd ed., Steve Jackson Games Incorporated

Best Role-Playing Adventure:

Battle for the Golden Sun, Star Wars, West End Games

Best Role-Playing Supplement:

GURPS Space, GURPS, Steve Jackson Games Incorporated

Best Graphic Presentation of a Role-Playing Game, Adventure, or Supplement:

Petersen's Field Guide to Cthulhu Monsters, Call of Cthulhu, Chaosium Inc.

Best Pre-20th Century Boardgame:

Gettysburg, The Avalon Hill Game Company

Best Boardgame Covering the Period 1900-1946:

Kremlin, The Avalon Hill Game Company

Best Boardgame Covering the Period 1947-Modern Day:

The Hunt for Red October, TSR, Inc.

Best Fantasy or Science Fiction Boardgame:

Sky Galleons of Mars, GDW

Best Graphic Presentation of a Boardgame:

Sky Galleons of Mars, GDW

Best Play-By-Mail Game:

Kings & Things, Andon Games

Best Fantasy or Science Fiction Computer Game:

Pool of Radiance, Strategic Simulations, Inc.

Best Military or Strategy Computer Game:

F-19 Stealth Fighter, Microprose Software, Inc.

Best Screen Graphics in a Home Computer Game:

F-19 Stealth Fighter, Microprose Software, Inc.

Best Professional Adventure Gaming Magazine:

Strategy & Tactics, 3W

Best Amateur Adventure Gaming Magazine:

Sorcerer's Scroll, Tori Berquist

Hall of Fame:

Rick Loomis

RENEGADE LEGION

TOG Onager

The *Onager*, introduced into TOG in 6814, is a radical departure from the more conventional fighter designs. Intended primarily as a long-range stand-off interceptor, the *Onager* is a deadly craft to both pilots and foes. In fact, if only one word could be used to describe this class, the word would be "audacious," equally applicable to both its armament and its tactical use.

Many fighters from TOG are armed with lasers, mass drivers, and EPCs (though the *Verutum* is a notable exception). To use such weapons effectively, the fighters must close with their target; in general, the closer the better.

However, the opposite is true with the *Onager's* NPC main armament, most effective at a combat range of no less than 105 kilometers. This runs counter to all standard fighter training doctrines and tactics, and resulted in numerous fatalities when the class was first introduced.

In fact, simulations have shown that pilot trainees with no flight experience who trained exclusively on the *Onager* often develop the best combat records, as long as they remain with that class, because they have so much less to "unlearn" about combat tactics. Many experienced aces, accustomed to other classes of fighter, have been killed when they instinctively closed with their target and rendered their NPCs virtually useless. It is a common joke among *Onager* pilots that "if your own instincts



John A. Theisen

don't kill you, nothing will!"

Onager, which means "wild donkey," is derived from the name of a large ancient Roman siege cannon. An expensive design, *Onager* has production costs which are higher than those for the *Martioabulus*, a heavier fighter. Better shielded and armored than any of the most commonly found TOG fighters, it is nevertheless unequipped for atmospheric entry. This limitation has had some negative impact on the

craft's deployment, but it remains effective for system defense, offensive interception, hit-and-run installation raiding, and as a short-range picket around naval task forces. A few predictable comparisons have been made to the Commonwealth's own *Space Gull*, but TOG officials describe any similarities as purely coincidental.

Although many combinations are possible, a customary hardpoint payload often consists of one ECM pod,

one RIS missile, and two SSS missiles. This arsenal, combined with the *Onager's* three powerful NPCs, has proven well suited to the craft's mostly offensive mission objectives.

The high thrust modification involves removing the wing-mounted NPC 16s and replacing them with corresponding hardpoints. This variant improves overall flight performance, but the reduction in firepower makes the primary mission of long-range interception somewhat more difficult to accomplish.

Despite (or perhaps because of) its unusual nature and combat capabilities, the *Onager* has become a personal favorite among several TOG admirals, where it has seen some use aboard fighter carriers. It is also deployed as a deep-space installation defense fighter, and with numerous long-range strike squadrons.

In Shennedam County, *Onagers* serve in small numbers with both the 991st Carrier Fighter and 3021st Interceptor wings.

Class: Heavy fighter

Mass: 184

Cost: 3,435,800

Engines: As follows

Right Engine Rating: 1250

Left Engine Rating: 1250

Thrust: 7

HighThrust Modification:

(with NPC 16s replaced) 8

Streamlining: No

AntiGrav: No

Shields

Bow: 60

Right: 50

Left: 50

Stern: 50

Armor

Bow: 100

Right: 80

Left: 80

Stern: 100 Ω

WEAPONS

Type	Location	Range				
		1	2-3	4-6	7-10	11-15
NPC 20	Bow	3	9	16	20	0
NPC 16	L/Wing	1	4	9	16	0
NPC 16	R/Wing	1	4	9	16	0
Hardpoint	L/Wing					
Hardpoint	Bow					
Hardpoint	Bow					
Hardpoint	R/Wing					

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off after 12 to 16 turns automatically). But not ever having an ally is definitely strategically worse than dealing with that.

THE MAPS

While *The Next Empire* is the first game I know of to offer individual sensor maps for each turn, *Space Combat* has joined the ranks of games which take advantage of the laser printer to produce customized turn maps depicting the positions of enemy craft (or offspring, in this case) and weapons. Since the playing area in *Space Combat* is a 25 by 25 grid with wraparound, there are no real edges to the map. To delineate where the X and Y coordinates start and end, the map uses a heavier line than the normal grid line. Your

death of an offspring) or with symbols identical to those used on the maps (for instance, the same symbol is used as an icon for spore movement and to depict a spore cloud on the map).

Unfortunately, there is not enough room on the map to give unit identifications, and many of the units look identical (all Aals look the same as all other Aals, etc.).

Unit identification is thus depicted partially through placement on the map (your Kolobians are shown in the top third of a grid square, with the weapons in the middle third, and enemies in the bottom third). However, it is still very easy to get confused since more than one unit often occupies a single grid square. So referring back to the turn sheet, or even writing

which unit is which on the map (since you get a new one for every turn) is necessary. But having your own map printed with every turn and filling in the unit names yourself is still much better than having to im-

provide your own map every turn.

THE COMPANY

With play-by-mail games, it is often just as useful to say something about the company as well as the game. Many play-by-mail companies don't last long or are plagued by poor service to players even though they run a good game. Twin Engine was always responsive when I had a question, offered suggestions when I was confused, and actually made substantial and helpful changes in the earlier version of the game's rules based on player input.

It has a good reputation for

REVIEWS

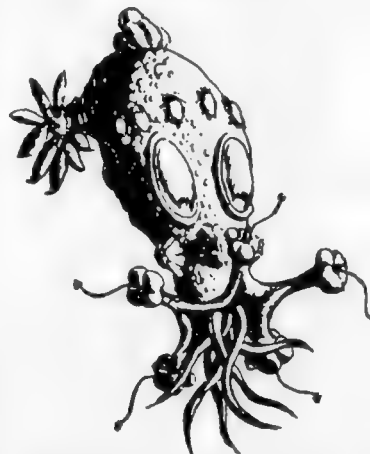
keeping player accounts straight and current, and at the moment it will even take phone-in turns for no extra charge. Like many of the reputable play-by-mail companies, it also has connections to CompuServe and MCI for players who own computers with modems and wish to E-mail their turns.

EVALUATION

I have played in both a 3-D and a 2-D version of *Space Combat*. The 3-D game was the original form of the game, but the 2-D version is much easier to represent in a good laser-printed map and also easier for many players to comprehend, so for now Twin Engine is offering the 2-D version only. If the 3-D version is ever offered again, I would highly recommend it to any gamer who is looking for a good combat game which takes advantage of the three-dimensional nature of space; it is fun to play, but a challenge to master.

The current 2-D version is an excellent game in its own right, and the laser-printed maps are a juicy additional treat. This game is great for

Parent



anyone interested in trying out a play-by-mail game for the first time—it is clearly written, reasonably priced, reliably run, and fun.

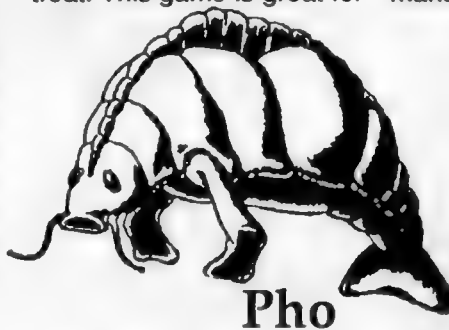
Note

For those of you interested in *The Next Empire*, reviewed last issue, Cyborg Games is being forced to institute a price increase to \$7.50 per turn (plus a \$20.00 setup fee; \$15.00 if you already have the rules). This is due to the increasing cost of the game's allowance for unlimited fleet construction (and more pages to print, more commands to input, more postage for mailing). Even at this price, I would highly recommend the game.

If you have any products you would like to see reviewed or if you are interested in writing a review, please drop me a line at GDW. Ω

Inu

parent Kolobian is always placed in the center of the "page," represented by a small depiction of a parent. Other units you have seen or sensed move are represented at their last observed or sensed position, as are weapons you have observed or sensed. This visual depiction of your status as of the end of the last turn makes it much easier to decide upon actions for the next turn. To find out what happened during each segment of the past turn, a player can consult the turn report, which highlights different types of actions and results with small icons symbolic of the occurrence (a series of "crosses" for the



Pho

Challenge Classifieds

Challenge Classifieds, Challenge Magazine, Box 1646, Bloomington, IL 61702

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PLAYERS WANTED

PHILADELPHIA TRAVELLER group seeks adult players for campaign. Willing to teach adult beginners the **Traveller** system. Contact Penn Eckert, 624 W. Moyamensing Ave, Philadelphia, PA 19148-3231. (40)

2300 AD PLAYERS wanted in the Everett/Lynwood area of Washington state. Contact Michael R. Wheeler, 3211 Grand Ave, Apt 1, Everett, WA 98201. (40)

FOR SALE

VARIANT, discontinued RPG fanzine including **Traveller** deckplans, character classes, equipment. All 16 back issues only \$5.00, plus \$1.00 postage. Sample issue \$1.00. Gary Reilly, 395 Wimbleton Road, Rochester NY 14617. (40)

MEGATRAVELLER software for Atari ST (color machines only). Alien word generator, plus random world/subsector generators. All stand-alone STOS Basic programs. All three for £6 (£7 overseas) including the disk, postage, and packing (we do not accept blank disks). Overseas orders sent air mail. Simon Ward, 8 Kentmere, Greenways, Spenny-moor, Co. Durham, DL16 6UB, UK. (40)

SPREADSHEET Templates: Apple II Appleworks spreadsheet templates for **MegaTraveller**, craft design, **Spacemaster** starship design, **2300 AD/Star Cruiser** ship design. Send \$2.00 for each spreadsheet, and either send \$3.00 for a disk, or send your own disk (3 1/2 or 5 1/4), and send an SASE to Glen Allison, 1306 W. Pearl, Pasco, WA 99301. (39)

PRE-PUBLICATION editions of **Battles**, the only wargame that teaches principles of strategy on a tactical scale. Send \$17.95 (\$15.95 plus \$2.00 S&H) to Perry N. Jones, 35 Bates St., No. Brookfield, MA 01535. (39)

TRAVELLER supplement 9, **Fighting Ships**, in excellent condition, plus Compuserve's **Mega Wars 1** commander's manual (including poster-sized space chart and four poster-sized space vessel blueprints). Make an offer for one or both to Marty Kloeden,

Box 5335, Springfield, VA 22150-5335. (39)

MANY TRAVELLER and related products. Send SASE for list of available items or send want list. \$5.00 for miscellaneous **Traveller** grab bag, post paid, Wes Allison, 901 S. Boulder Hwy. 34, Henderson, NV 89015. (39)

TRADE

I WOULD LIKE to trade the following items: *Dr. Who RPG* (boxed set), *Countdown*, (*Dr. Who* module), *The Warriors of Batak* (Task Force). I am interested in swapping for *SpaceMaster RPG* boxed set (Iron Crown), and *Akaisha Outstation* (Iron Crown), but make me an offer. Jimmy Nugent, 512 N. Resident St., Wharton, TX 77488. (40)

SWAP IDEAS and materials for **MegaTraveller**, **2300 AD**, and **Twilight: 2000**. I've been running a **Traveller** campaign for four years and am now switching to **2300 AD**. If you'd like to swap designs, scenarios, or ideas for any of these RPGs, contact Mark Reilly, Box 2 Union Building, Newcastle University, Shortland N.S.W. 2308, Australia. (39)

T-TECH EXCHANGE. Free exchange of **MegaTraveller** ship, vehicle, robot, equipment designs, etc. You send me yours, I'll send latest T-Tech package with designs from other participants. SASE for more info. No cost, no prices, just trade! T-Tech Exchange, C/O Philip Athans, 7783 Kensington Lane, Hanover Park, IL 60103. (39)

WANTED

TRAVELLER ALIEN module 4, *Zhodani*, in very good condition.

Maybe trade for other **Traveller** item(s)! Also looking for GDW's **Trader** program disk for C-64. Is there such a thing—has anybody converted it? Send info to Who, 605 Penitencia St., Milpitas, CA 95035-4222. (40)

ISSUE 25 of Challenge. Either original or photocopy (just **Twilight** information). Willing to pay reasonable price. Call (213) 377-5435 or write to Tyson Harper, 31042 Hawksmoor Drive, Rancho Palos Verdes, CA 90274. (40)

OUT-OF-PRINT Traveller stuff, supplements, adventures, magazines in good condition, or clear photocopies. Please send your list to Arne Rassek, Berliner Str. 23, 3005 Hemmingen 1, West Germany. (40)

ALL DECK PLANS for *Star Trek: RPG*, especially *USS Enterprise NCC-1701* (preferably by FASA, but Ballantine acceptable). No photocopies, please. Good price paid for best condition. Can purchase from U.S./Canadian sources through relatives in Canada. Graham Todd, 36, Deerswood Road, West Green, Crawley, West Sussex RH11 7JN, United Kingdom. (40)

PHOTOCOPIES of the following old FASA material: *Aslan Mercenary Ships*, booklets only, deckplans for *Adventure Class Ships 1 & 2*, *Fennis*, *Valkyrie*, *Thithys & Vlezhdath*. Patrick J. Hoyer, 343 Washington St., Holliston, MA 01746. (40)

CHALLENGE 25. Please send price and shipping cost to Yves le Rhun, 8 Rue Gustav Charpentier, 94 240 L'Hay Les Roses, France. (39)

IBM PC PROGRAMS for **2300 AD**. Also looking for **2300 AD** and **MegaTraveller** players in the

Battle Creek, MI area. Rick Sherman, 155 Brentwood Dr., Battle Creek, MI 49015. (39)

A COPY OF THE original *Spacefarer's Guide to Aliens*. Please quote a price (including shipping costs). Contact Bryan Borich, 3890 50th St., San Diego, CA 92105-3005. Phone (619) 563-8172. (39)

ALIEN MODULE 2, **K'kree** by GDW. Original or photocopy needed desperately. Will pay top dollar. Write Scott Streibich, 2125 Jackson Bluff Road, Box B202, Tallahassee, FL 32304, or call (904) 575-9233. (39)

GOOD COPIES of *High Passage* 1, *Journal of the Travellers' Aid Society* 1, and *Travellers' Digest* 2. Send info to Jimmy Simpson, 1735 Ridgeview Dr., Arlington, TX 76012. (39)

FANZINES

VOYAGES is taking off—broadly covering science-fiction gaming, including *Traveller* and **2300 AD**, and doing so with a dual goal: to provide usable gaming material, and to be enjoyable and entertaining just to read. Four-issue subscription \$9.00 U.S. Starlance Publications, 50 Basin Dr., Mesa, WA 99343. (38)

CONVENTIONS

GATEWAY '89: September 1-4, Los Angeles, CA. Sponsored by Strategicon, and located at the LA International Airport Hyatt Hotel, Gateway '89 will feature all types of family, strategy, and adventure boardgames, miniatures, role-playing, and computer games. Bargains at the flea markets, auctions, and exhibitor area. Also seminars, demonstrations, and special guests. Contact Strategicon, PO Box 8399, Long Beach, CA 90808 or call (213) 420-3675 for further details. (40)

TACTIKHAN '89: September 1-3, Westminster, CO. The Denver Gamers Association and worldwide Wargamers present the convention of the future, to be held at the Ramada Inn, Westminster, CO. TactiKhan '89 will feature

gaming of all kinds, including official RPGA tournaments, a Puffing Billy tournament, miniature events staged by the Colorado Military Historians, and an auction. For information, contact Denver Gamers Association, PO Box 11369, Denver Co 80211. (40)

QUAD CON '89: October 13-15, Davenport, IA. The Riverbend Gamers Association is sponsoring Quad Con '89 at the Palmer Auditorium in Davenport. Many RPGs, boardgames, miniatures, painting contest, costume contest, and other events. Send SASE for preregistration brochure: Riverbend Gamers Association, PO Box 8421, Moline, IL 61265. (40)

MILEHICON 21: October 27-29, Denver, CO. This science-fiction, gaming, and filking convention will be held in the Executive Tower Inn, 1405 Curtis St., Denver, CO 80202. Robert Bloch will be the pro GoH; and Forrest J. Ackerman, the Fan GoH. Guests include Simon Hawke, J. D. Masters, Nicholas Yermakov, Connie Willis, John Stith, David and Daniel Dvorkin, and others. Events include panels, costume contest, robotics duel, videos, parties, art auction, dealers' room, and more. Scheduled tournaments: *Paranoia*, *Empire Builder*, *M.U.L.E.*, *AD&D*, *Talisman*, *Battletech*, **2300 AD**, *Dungeonquest*, and others. For more information write to MileHiCon 21, PO Box 27074, Lakewood, CO 80227. (40)

MACQUARIECON '89: December 8-10, Sydney, New South Wales, Australia. The MacQuarie University Role-Playing Society (M.U.R.P.S.) will host this convention on campus in Sydney. Macquariecon is Australia's largest role-playing convention and will include *AD&D*, *Traveller*, *Twilight: 2000*, *Paranoia*, *Call of Cthulhu*, *James Bond: RPG*, *Rolemaster*, *Judge Dredd*, *Star Wars: RPG* and many others. The convention will also host several boardgames and free-forms. For more information, contact M.U.R.P.S., PO Box 1577, Macquarie Centre, North Ryde, NSW 2113, Australia. (40)

CONTRARY '89: November 10-11, Chicopee, MA. ConTrary to popular opinion, Springfield's gaming convention will be held at the Parwick Center, in Chicopee, MA, and will feature military/strategy games, role-playing games (including at least two RPGA events), and miniatures events. For more information, write to ConTrary '89, 933 Belmont Ave., Springfield, MA 01108, or call (413) 731-7237 and ask for Mark. (40)

VALLEY CON 14. Science-fiction, fantasy, and comic convention Sept. 9-10 at the Days In Conference Center, 600 30th St. So., Moorehead, MN. Video rooms, art show and auction, a hucksters' room, numerous panels and demos, a banquet, and a variety of gaming events, which will include *AD&D*, *Star Trek: RPG*, *Runequest*, *Rolemaster*, *Spacemaster*, *Star Wars*, *Dr. Who*, *Call of Cthulhu*, and more (Courttest of Valley Con). Send SASE to Valley Con 14, PO Box 7202, Fargo, ND, 58108, or call (701) 232-1954. (39)

COLONIAL CITY Game Fest. The seventh annual Colonial City Game Fest will be held September 16-17 at the Mt. Vernon Memorial Building on East High Street in Mt. Vernon, OH. Featured games will include *AD&D*, *Harn: RPG*, *Twilight: 2000*, *Call of Cthulhu*, *Circus Imperium*, and a variety of historical, science-fiction, and fantasy miniatures games. Write to Colonial City Gamefest, C/O Mt. Vernon Gamers Association, PO Box 1184, Mt. Vernon, OH 43050. (39)

TOLEDO GAMING Convention 7. October 7-8, Toledo, OH. The seventh annual edition of Northwest Ohio's largest gaming convention will be at the university of Toledo's Scott Park Campus. More than 140 events, with role-playing, strategy, tactical, board, and miniatures tournaments, two auctions, demonstrations, painting contests, and exhibitors. Features include *AD&D*, *Battletech*, *Warhammer 40K*, *Starfleet Battles*, *GURPS*, *Star Wars*, *ASL*, *Axis & Allies*, **Space: 1889**, and others. Send SASE to Toledo Gaming Convention 7, C/O Mind Games, 3001 N. Reynolds Road, Toledo, OH 43615. (39)

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